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PROF. EDWARD SUESS.

IN this portrait we see animation, enthusiasm, sensitiveness, excitability, and a zealous earnestness in whatever he thinks is true or valuable. The head appears to be rather light behind the ears, but the lines running from the opening of the ear to the anterior and upper parts of the head, seem to be long, showing that he is decidedly intellectual. He has a quick and intense perception, makes himself master of all the facts within his reach as soon as possible, and

permits nothing to escape his attention that may interest his judgment or excite his imagination. He appears to have language enough to express his thoughts and to make himself not only an apt and successful teacher but to carry personal and moral force with his efforts. In other words he impresses people with the idea that he is naturally sincere; that he is honest in his ideas, and has become thoroughly convinced of the importance of the subject that he asserts to be true.

The upper part of the forehead being large, shows philosophic interest in subjects and ability to grasp their interior philosophy and relations. He is therefore much of the critic, detecting error, and flaw, and mis-statement, and erroneous argument.

His relish for the study of mind is one of his marked traits, and he would enjoy the study of mental philosophy. In fact he is obliged to philosophize on everything he touches; and since his own mental nature is constitutionally hungry for culture and mental stimulus, he will enjoy the philosophy of mind as much as that of any other topic.

He has large Imitation, and adjusts himself and what he does and says to the sphere in which he moves and to the people who come in contact with him. And he has also the elements of agreeableness, blandness, smoothness, and persuasiveness.

He has strong Spirituality, a dreamy sense of something richer, and better, and beyond the present attainment; hence he has, we think, unbounded faith in truth and in its just inferences.

He should be known as a benevolent and sympathetical man, cordial in his affectionate regards, courteous in his demeanor, affable, pleasant, and persuasive, and very intelligent in his presentation of subjects that belong to daily life as well as those that belong to the higher branches of thought and study.

We would not regard him as a selfish man. He may have a quick temper and resent insult and injury, may be very sensitive as to his reputation, and rank, and standing, and prudent in his plans with reference to safety. We regard him as a cordial friend, would be a devoted lover, but his chief mental force lies in his logical, imaginative, inventive and creative range of faculties.

If he were connected with mechanism he would be an inventor. If he were connected with chemical or mechanical science, he would be ever inclined to push his investigation into new fields, and be likely to write his name where the space is clear and other names are not very numerous.

One of the most prominent representatives of geological science in Europe is Prof. Edward Suess, of Vienna. With his name, the solution of many geological problems is linked, and from his indefatigable disposition to labor can we hope for future rich fruits. In him we find not merely the discoverer, but also the earnest teacher, who amid absorbing scientific labor has found time to work with excellent results for the welfare of his fellow citizens as a representative of the community in the national parliament.

Edward Suess was born on the 20th. of August 1831, in London, where his father had been a clergyman of the English Church. How the family came to Austria we are not able to say. At the close of the year 1849, we find Suess a student at the University of Prague, and in 1850 he was in the Vienna University. At both places he pursued the studies of natural science, especially Geology and Mineralogy. As early as 1852 he brought out an independent geological work on Bohemian Graphtoliths, and became assistant at the Court Museum of Minerals in Vienna. His reputation as a naturalist was established in the following year through some important investigations in regard to brachiopods, which appeared among the proceedings of the Imperial Academy of Science, with the title "On the Brachiopods of the Kossen

Layers." This was published in 1854, and in the following year he produced his "Brachiopods of the Hallstadt Layers." These and other researches in Paleontology led to his appointment in 1857 as Professor Extraordinary of Geology at the University of Vienna.

In 1860 Suess published a comprehensive geological study entitled "The Soil of the City of Vienna, according to its Natural Formation, Condition and Relations to Popular life." This had quite a sensational effect, and drew general attention to the young scholar. It also had certain political effects; for in 1863 he was elected a member of the Vienna Common Council with which he was connected until 1873, and then after an interval of but one year he was again elected to a seat in the same body. Here Prof. Suess developed very useful activity as the Reporter of the Water Commission.

The great aqueduct which supplies Vienna with excellent drinking water from powerful mountain springs, and which has operated so much toward improving the healthfulness of the city, is in great part his work. It was opened in 1873, and at the ceremonies of the occasion Suess was honored with the freedom of the city.

In the meantime viz in 1870 he was elected for the Lower Austrian Landtag and served with fidelity; in 1873 Leopoldstadt, a district of Vienna, elected him for the Reichsrath, of which until now he has been an eminent member. Here he has shown power as an orator on the side of the Left, especially in the struggle against ultra-montanism, finding his historical information and natural sagacity of important service. Notwithstanding his municipal and state relations, which demand a great part of his time he has not permitted his interest in science to flag in any respect. General studies, and researches in special departments of science are mingled with his political work, and now and then some fresh publication shows clearly enough that he is no superficial observer, but has ever in view positive results bearing upon new ideas.

He has made a special study of earthquakes; visiting Mount Etna in the spring of 1871 for that purpose, and two important treatises bear witness to his activity in this respect: "The Earthquake of Lower Austria," published in 1872, and "The Earthquake of Southern Italy," 1873. In these writings Suess indicated the new theory of earthquakes and established the first series of vibration lines by actual measurement.

These studies have led him further into the subject of mountain formation, with which the majority of all surface disturbances are associated. His book on the "Origin of the Alps," published in 1875, has especially sustained the modern theory of mountain formation. Through such investigations Prof. Suess prepared the way for the production of the great and comprehensive volume which he has given to science, viz "View of the World;" part 1, published in 1883, part 11, in 1885. Since Lyell's "Principles of Geology" that appeared in 1830, no similar work has appeared, Prof. Suess', however, may be said to be superior to that, for the reason that so much fresh information is contained within it, and besides for the first time a complete picture of the surface of the earth and its history is given; not only are the facts represented of a most elaborate nature, involving an examination into authorities of every kind, and a review of all parts of the earth, but the spirited method of Prof. Suess in presenting the facts, and the elevated literary style of the work in general make it one of peculiar excellence.

The wealth of its information, the great literary knowledge which was necessary to bring from all parts of the earth the proofs and authorities for the observations recited, the spirited boldness of this performance, and the fascinating style of description distinguish, in a great measure, the effort. In the

same work he demonstrates his views on the two components of surface change arising out of the contraction of the outer portion of the Earth, viz, tangential folding and vertical depression, with the utmost comprehensiveness, and defines in this connection also the later opinions on the fundamental reasons for the volcanic appearance of isolated elevations. He has shown also the relation of natural history to geography, which forms a leading motive of the whole work. Among the smaller treatises that Prof. Suess has given to the scientific reader is one entitled "The future of Gold," published in 1877 as a resultant of a special investigation in which he pre-eminently took part in Novan, and which has furnished topics for discussion in financial circles.

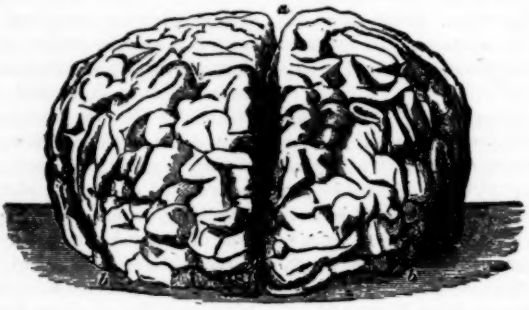
FAMILIAR TALKS WITH OUR YOUNG READERS—NO. 3.

EVENTUALITY AND TIME.

OUR last talk closed with Individuality and it is quite proper for us to go just a step higher in the front part of the brain, where we shall find an organ that is scarcely less important to all who wish to develop into well-informed men and women. I mean the organ of Eventuality. This must be a very interesting organ you will say, my young readers, after looking at the illustration of the three men who are having a pleasant social time together.

for them, and they want to know how it is that we accept so many "brain centres" n that part. Now, any one who has examined a real brain—one taken from the skull of a grown up person—knows that the frontal lobes are much divided and broken at the surface by fissures or openings, and this is seen to be the case at the parts over the eyes more than anywhere else.

I give you an illustration of the brain as it appears in a front view. If you count the little knobs or rounded swell-



BRAIN—FRONT VIEW.

But before describing Eventuality, let me answer a question that is often put by people who don't know anything about Phrenology, and appear to be unwilling to believe in its truths. They say that there are so many organs placed in the forehead, or frontal part of the brain in our diagrams, that there is no room

ings between the lines which represent the fissures or openings, you will find that the intellectual organs have plenty of "centres" for their accomodation, and room to spare. Nature seems to have divided up the matter in those rope-like folds or "convolutions" specially for the use of the mental faculties, and

there each presides like a European prince over a bit of country that he proudly calls "my dominion."

I have told you how Individuality acts, giving you the disposition to see the objects of the world, prompting the child to inquire, "What's this?" "What's that?" etc., and so leads the way to knowledge. It does not concern itself about what the things are doing, but simply about their existence. They are seen or felt or heard, and then the other faculties down there by Individuality, Form, Size, Weight, Color, Order, Calculation, come in for their share of work, and each takes its particular measure of the object we are looking at, and it thus becomes known to us by certain qualities of its own. Now, Eventuality belongs to a grade of faculties higher than those we have just mentioned. It relates to the action of things, what they have done or are doing. Hence it is called by some phrenologists the historical faculty, although other faculties have something to do with history.

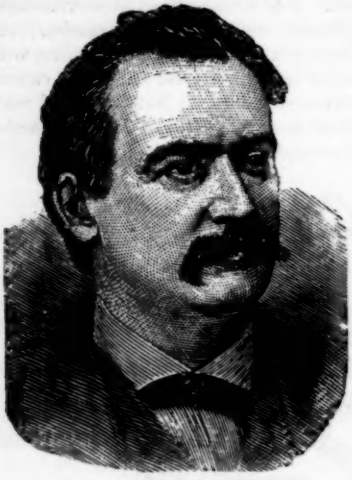
When Eventuality is large it makes the centre of the forehead look full and round, and they who have it well developed take a great deal of interest in historical events and the active life of society. They are fond of mingling in the tide of life in great cities, of going where "something is going on," as they say. And we find them at conventions, military reviews, anniversaries, etc. They can keep their information well, and if they have good Language can tell with ease what they have seen and read. Good story tellers have large or active Eventuality as a class.

A Good Story Teller.

As I look back to my school days I recall the boys who were great on stories and every one of them had large Eventuality. The man in the picture, who is relating with so much gusto the account that seems to have a striking effect upon his small audience, shows a good development of the organ, and also of the forehead in general, so that he is finely qualified to talk.

Among speakers the man who can describe nicely what he has seen or read is always attractive. And the books that are most read are those that deal with events and relate them with spirit and

grace. I have seen a little girl the centre of a delighted group of children to whom she was relating some occurence of home or school. You have seen something of the kind, I know, and perhaps wondered what it was that made her so eloquent



GEN. MARTIN—TIME LARGE.

and winning. It was in great part her good Eventuality joined with a lively nature or temperament, and large Language. Among children girls as a class show more Eventuality than boys of the same age, both in the head and in their studies.

TIME.

We meet with persons who can describe what they see from day to day with much particularity, but forget names and dates. Dates with most of us are most trying to the memory. We may read an account of something that is very interesting and carry a general sketch of it for years in our minds, but the date will slip away in a short time. There are some people though who appear to be very happily gifted in this respect, they remember the date of a small matter without an effort, and when you speak of it will say, "That was on the 25th of October, 1874." Such persons have the organ of Time very large.

This organ is situated in the head near the outer part of the forehead, and about half way between the eyebrows and the hair. When the forehead in that part is nicely filled out Time is large, and it would be an interesting experiment for you to try the boy's or girl's memory who appears to have the faculty strong. If they are studying history, say of the United States, you could ask when certain battles of the Revolution were fought, when some of our large cities were founded, and about the times of the Presidents, and other important things that it is well for the intelligent youth, who expects to become a good and useful citizen, to know.

The portrait of Gen. Martin shows Time well filled out, and so does the portrait of the eminent statesman, Richelieu, who in the time of Louis XIII. of France, helped so much to make his nation great and powerful. The king was a weak capricious man, fond of pleasure and caring little for government, leaving that almost entirely to Richelieu who was at the same time a Cardinal of the Roman Church and the Prime Minister of France. Richelieu was almost all the

CARDINAL RICHELIEU.

time in trouble with the nobility, who did not like him, and very often Louis XIII. himself, was his enemy, because the

Prime Minister would not favor his foolish whims of personal gratification. Few men who have lived have shown greater skill and dexterity in public affairs, especially in managing very difficult and mixed-up affairs than Richelieu. He must have possessed a remarkable memory to do what he did—as it is said he never forgot the faces of people, and often to show that he had not forgotten a man who had once been in his service, or whom he had seen, he would mention some trifling thing that the man had done.

who can sing well and keep time in jumping the rope or dancing; and the boys who show unusual promptness in going through the gymnastic exercise or military drill have it large.

In some lines of business the observance of Time is very important. On railways, in the post offices, in telegraph offices, the clerk who can get along best has this organ large. You may depend upon it that the boy who always goes promptly to his work, who performs his errands with dispatch, believes in being "on time." Such we may consider the boy in the

THE MESSENGER BOY—IMPORTANT!

illustration. He has been given a message and is off to deliver it, thinking that it is a matter of great importance. And it is a matter of great importance, my young friends, to do what you are charged with in good season. Your Time may be moderate, but you may cultivate and strengthen it, just as you could make your arms stronger by exercising, so that it will be of better service to you, and help in making life even, orderly and successful.

EDITOR.

They who have this faculty strong are disposed to be prompt in keeping their engagements, and live in a closer relation to the work of every day than others. School children blessed with good Time, not only remember the dates in lessons, but are attentive to the clock in the morning when it is near the hour for going to school, and when it is near the time for dismissal. You may be sure that the tardy, indolent ones who come straggling in after the bell has been rung, are not large in Time. Generally those girls

ESSENCE OF ORATORY.

[Report of an address before the Philadelphia School of Oratory. Delivered by W. M. Taylor, D. D.]

ELOQUENCE is the uttering of conviction or emotion, so as to produce conviction or emotion in the hearts of those addressed. Eloquence existed before rules. As speech existed before grammar, oratory existed before the object of the study. The eloquence of Judah pleading for Benjamin in ancient days, has thrilled hearts through centuries. Anatomy is not life, but anatomy shows us the channels of life, and teaches us how to live better; so rules are useful in the study of eloquence. There are three factors to be considered, matter, manner, and spirit. The subject matter, in the first place, is important. Logic, invention, reason, fallacies, and the like must be understood by the student; so also, in the second place, is style important; illustration, rhetoric, elocution, all that is comprehended in the term eloquence. But the third factor, the spirit of the man is most important; it is that which lifts up the matter and the manner, which moulds the man and his matter and adapts them to the occasion. The subject matter may be cogent and the form may be excellent, while the spirit is absent. On the other hand, the speaker may be in his presence base; his diction may be uncouth, and yet he may carry everything before him. It is the spirit that gains the victory. The first and second factors, some speakers seem to possess from the start. Their elegance of diction and manner seem to be habitual and automatic, just as one who has learned to walk, naturally turns out the toes, and does it without thinking. If one acquires the art of eloquence late in life his style may become mannerish and stilted. "A little knowledge is a dangerous thing;" it is apt to make one self-conscious. A man himself must be lost in the purpose he has in view; self must be kept out of sight.

On one occasion an orator lost his point in trying to correct an ungraceful gesture of which he had been told. The man is to the matter as the powder is to the ball; but the spirit of the man sends the ball to the mark. What is this spirit? It is a question hard to answer; very much like the question, "what is life? Our answer is apt to be as vague as that of the German philosopher, "Life is the *ego* of organism." Our work, however, is simply to recognize, to nourish, and to train life. It is all that we can do, and so it is with eloquence. Yet patience may help us. Eloquence is that which enables a man to see the occasion and leads him to say the right thing. It is something like the genius of a poet or painter. Eloquence does not belong to all, it is rather a gift from God; it cannot be imparted, though it may be cultivated.

We are reminded of the question put to the painter Opie, "Pray sir, what do you mix your colors with?" "BRAINS" was the laconic answer. And so it is in the study and practice of eloquence. Life is before organization, but organization does not produce life; training does not make an orator; but an orator may be benefited by training.

The first requisite of eloquence is a good character; any lack here will put the speaker at a discount. You may abstract a picture from the painter's character in your thought. Not so with oratory; the orator is powerless if you know him to be insincere in purpose or immoral in character; but if he be known and read of all men as a pure and disinterested man, his language bears "the accent of conviction." His character is related to his speech as a reflector to a lamp, it widens the area of illumination and intensifies the lustre.

A second factor of eloquence is a cause worthy the employment of eloquence. Some men exhibit a great deal of feeling in a discussion which requires no

emotion; it seems like an ocean tossing a feather; but it is a grand thing for a man to rise to the occasion when the occasion itself is suggestive and inspiring. We may account for the paucity of orators in our age from the fact that there has latterly been nothing great to call that power out. In the early ages of Christianity there were occasions to develop eloquence, and so we may say that Christianity made the dumb to speak. So it was in the age of the German and English reformations; in the days of Athenasius, Luther, Knox, the two Pitts; in the days of the Anti-slavery excitement in this country, at the time of the rupture of the Scottish church. All those causes were worthy of the most impassioned eloquence, and orators were then brought to the front.

A third factor is the conviction of the importance of the orator's cause. He perceives its urgency; he cannot but speak; it is impossible for him to repress utterance; what he has within must be said; he must say it and he must say it now. With some people eloquence is "nothing but roaring." If one is unsettled in his convictions let him at least be silent, for doubt is infectious, especially is it so when doubt is uttered by men of high integrity.

The fourth factor is a great occasion. The orator is raised to the occasion in part by the audience. Steam is generated and it carries him on. It stirs his soul within him. A faltering fireman was once stimulated, as he lifted the ladder to the falling wall with fear, by a shout in the street, "Give him a cheer." The cheer was given, and it inspired his effort, and led him to save another human life at the risk of his own. So applause will bear up the orator as water bears the bark.

Gladstone's remark is a vivid one. "The orator gets in vapor what he gives back in flood." Even if the audience be hostile to the orator, their opposition becomes an impulse, because he is then put on his mettle; he acts like some wary athlete who measures his antagonist and fences a little, at first, giving here and there a light stroke, but finally rouses all his powers, presses on to victory, and stands supreme. Eloquence can not be carried about, bottled up; we need all these factors to develop it. The orator must be a man of unblemished character; he must possess a cause worthy of his power; he must be possessed of the conviction of the importance, the urgency of that cause, and he must have a great occasion both to develop his eloquence and to rouse the audience before him.

That was a ludicrous request which a gentleman who had entertained Henry Clay at his table made of the great orator after dinner: "Won't you now, my dear sir, please to make me and my wife one little speech?" Henry Clay needed the Senate, he needed the occasion, he needed a grand theme to develop this spirit of eloquence.

We infer from this subject as thus outlined, that orators must be rare. Still, we should be ready for any occasion, and chances are always ready for those who are prepared. Cultivate, then, the gift that is in you.

Paul said, "I am debtor to Greek and to Jew;" so he tried to repay the debt that he felt he owed. We are debtors to God, to our country, and to the church; let our lives be eloquent if we are not ourselves orators; let us thus secure the reward of true eloquence, entwining with its laurels the white wreaths of purity and truth.

"His full life, brimming purely to the sea, reflected heaven as clearly when it mingled with the main as when it ran, a limpid rivulet from its spring. Young and old, man and boy, he was still the simplest, noblest, most devoted, best. He truly was the man that every thoughtful man secretly wishes he might be. Those only know this who knew Francis George Shaw." G. W. C.

THE CONIFERÆ.

IN the early morning of the vegetable world, before the rose had diffused its odors, or the lily unrolled its spotless perianth, before the birds sang, or the boundaries of Eden were placed, the great family of Conifers stretched aloft their verdant arms, and distilled their resinous odors upon the new earth. Geology disentombs them from their deep sepulchres in the Devonian formation, and there, in those long sealed annals, we read of their early life and formation. The stony pages reveal their hoary antiquity, and also their importance in the pre-Adamite world. Unlike the ferns,

ITALIAN STONE PINE.

their usefulness has outlasted the ages of man's creation, and the recent changes upon the earth. The fragrant amber, which has been used from time immemorial, for personal adornment, is the petrified resin of the Coniferae of former ages which flourished where now are the lake beds of Central Europe. Through all the succeeding epochs of change. the conifers have asserted themselves among the families of vegetation, ever vigorous, long-lived, useful and numerous.

In all the great climatic changes, this family has clung to the earth, adapting itself to its surroundings, and defying the cycles of time to lay it in the deep sub-strata, where so many of its co-genitors have rested for long ages. This family embraces nearly all the evergreen forests of the Northern Hemisphere, and is distinguished for the resinous secretions of the different species. It is also invaluable for timber. The pine, the fir, the hemlock, cypress and juniper are among the most common species. The aroma of the resinous exudations is very pleasant, but the foliage and fruit, with few exceptions, afford no food for man or the lower animals.

The conifers are styled *Gymnosperms* from the peculiar arrangement of the seeds, which are unprotected by capsules or carpels, and lie open within the scales of the strobile or cone. These seeds are furnished with a thin transparent appendage or wing, and when the frost opens the scales of the cone, the wind bears the seed to some mountain side or deep glen, as well as to the highways of man, there to nestle, till the sun and dew calls it to life, and hangs a green crown for centuries where the wind-borne seed fell.

The conifers particularly delight in mountainous situations, *pine* being a Celtic word from pen, mountain or rock. Aside from their persistent and perennial beauties. the cone-bearers possess many sterling qualities. From Maine to New Zealand, the pine is utilized for building, and the wood of many of the varieties is highly ornamental.

The accession to the United States of the territory that embraces California and New Mexico, and the opening up of the vast region between the Rocky Mountains and the Sierra Nevadas have discovered to the botanist many wonderful forms and developments of the vege-

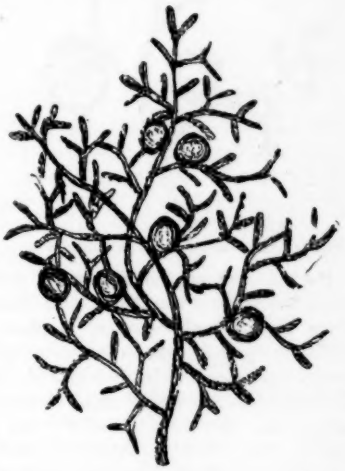
table kingdom, none of which perhaps are more interesting than the various conifers. About fifty of the three hundred known species, are found in the United States, those of the Atlantic and Pacific slopes having each their distinguishing features.

To California is due the honor of producing the giants of the forest world. In 1852 a party of hunters discovered in the valley of the Yosemite a grove of pines so gigantic that the tales they told of them were regarded as wild fables, until confirmed by the surveyor's measurement. A section of bark taken from one of these trees for the world's exposition at Paris was one hundred and twenty feet in length and ninety feet in circumference, and the tree from which it was taken was, when standing, three hundred and twenty feet in height. The vandalizing spirit of the nineteenth century at once seized upon these ancient monarchs of the vegetable kingdom, and many of them were destroyed before the law was made available for their preservation. Soon after their discovery, five men undertook the task of leveling one of these monster trees, and it required twenty-two days continuous labor, with the aid of pump augurs to accomplish the work. The stump of this tree was afterwards enclosed and used as a ball room, giving a circular hall ninety-six feet in circumference.

The greatest measurement given of the trees of this wonderful grove, was a pine *four hundred and fifty feet* in height the trunk ten feet above the ground, measured *one hundred and twelve feet* in circumference. About one hundred of these great trees were found in an area of about fifty acres, they were, and what remains of them are, unsurpassed by any forms of vegetable life in the known world, if we except some of the gigantic forms of *Algæ*, or marine plants existing in the tropic seas. They certainly exceed in size all other forms of tree life.

These giant conifers of the west were not wide spreading like some of the eastern pines, but a straight trunk, bald and rugged two-thirds the height of the tree, surmounted by comparatively meagre limbs, scattered and straggling, terminating in a conical apex as their distinguishing feature. They were adapted to resist the storms that have opened the mountain canons, sweeping down the mountain sides, during the centuries of their life and growth. These trees existing to-day, were green and growing before the Norsemen sailed to Vineland, or the sagas of Iceland were written. Northern Europe is also clothed in verdure by its cone-bearing evergreens.

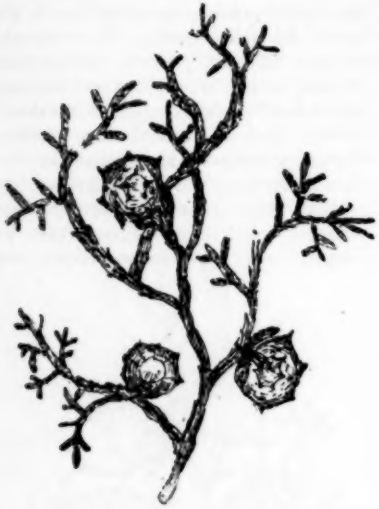
From the pines of Norway were wrought the Vikings' ships, whose incoming prows Charlemagne wept to see,



JUNIPERUS LYCIA.

as he looked out from his beloved Paris. The timber of the coniferæ is highly prized in architecture. The pine forests of Europe are almost limitless in extent. It is estimated that in Russia alone two hundred million acres are covered with pine and fir forests. The Gulf of Bothnia is framed in these evergreens, and the Swiss mountains are clad in verdure by the same family of trees.

Pitch, turpentine. resins and various balsams, are among the products of the cone-bearers, and the ancient nations of the East understood the art of extracting these products from the pine and its allies as perfectly as do the moderns now.



CUPRESSUS SEMPERVIRENS.

During one of the European wars, when the ports of the Baltic were closed, some fertile brain devised a plan to utilize the pine forests on the mountains above Lake Lucerne in Switzerland. An inclined plane, formed of many thousand pine trees, upwards of eight miles in length, and extending from the mountain side toward the lake, was constructed, and along this novel causeway which was kept thoroughly moistened, the pine trunks were swiftly conveyed. Pines one hundred feet in length would accomplish the journey in about six minutes.

The Stone-pine is found throughout Italy. Its dark foliage and prominent outline commend it to the artistic notice of the painter, and the tree forms a constantly recurring feature of the Italian landscapes of Claude Lorraine and other celebrated artists. In the countries of Asia Minor are found several distinguished members of the coniferæ. The Lycian juniper—*Juniperus Lycia*—contains the green olibanum, from which the frankincense of old was obtained. The eastern magi bore gifts of frankincense to Bethlehem, and this aromatic product of the eastern juniper was a worship ingredient of the incense of the Jewish temple. The Greek fishermen hold many superstitions concerning the wood of this tree, and believe that the light of its fires are more efficacious to attract the fish to their nets than that of any other wood. The cypress—*Cupressus Sempervirens*—is a common denizen of the countries of the Levant. Among the ancients this tree was particularly devoted to the service of the dead. Those olden nations that did not burn their dead, buried their wise men, chiefs and heroes in cypress-wood coffins. This wood rarely decays, and Egyptian mummies in closed in cypress-wood cases have remained in their undecayed covering through the ages. The classic nations planted the cypress above their dead, and used the branches as emblems of mourning.

"Meantime, o'er his own porch the *withered cypress* hung,
From his high halls a cry of anguish rung,
Woe for the dead, the father's stricken flower."

The *Astragalus Creticus*, though not a conifer, is a gum-bearing tree of the remote Mediterranean Islands, Cyprus, Crete and others. Its most valuable product is the tragacanth of commerce. Again crossing the ocean we find in the conifers of the Atlantic slope an exceedingly beautiful and valuable family. From the balsamic reservoirs of the various species, the pitch and turpentine in common use are distilled and the graceful beauties of these trees adorn the

pleasure grounds of wealth, as well as the distant mountain side, and lonely ravine.

The *Abies Americana* is, perhaps, the most beautiful and valuable of all the species. The deep purple cones, and leaves from one to two inches clustered upon the sides of the horizontal branches combine with the lofty slender trunk to render it an object of rare and graceful beauty. The wood is the most valuable of all the pines, being heavy, durable and strong. The deciduous leaf is another distinguishing feature of this most valuable of all American pines.

The Sacred Writings refer to various individuals of the conifer family and recognize their lofty and perennial beauties even as adorning the sanctuary of the Most High; and the beautiful customs of Christian lands call in the evergreen loveliness of the pine and its cogenitors to glorify the Christmas time. From prophet and bard of Holy Writ, from the rock-bound archives of geology, as well as from written history, and from their green lives and growing tissues of to-day we learn of the habits and varied uses of the coniferæ.

ANNIE E. COLE.

ASTRAGALUS CRETICUS.

INDICATIONS OF CHARACTER IN HANDWRITING—No. 6.

IN this, and the following article, I propose again discussing the alphabet, but this time to point out the character indications contained in the various forms of capitals.

Any superabundance of flourish in a capital displays an egotism and conceit that mars the beauty of an otherwise almost perfect handwriting. The flourishes of an ordinary writing master disclose the fact that he is peculiarly adapted for that work, but for very little else. And it is a rule that can almost be laid down as absolute and positive, that the simpler and plainer the capital, the higher is the order of intelligence and refinement possessed by the writer.

First, we have the capital letter "A"

No. 1.

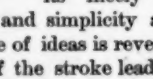
from an autographic copy of "The Cotter's Saturday Night" by Robert Burns, the Scottish Poet. It is a most harmonious letter, its proportions being almost perfect. Simplicity and sense of beauty are revealed, combined with will strongly marked, in the firm line which crosses the letter. Had the capital taken this graceful form with a loop to cross it, the letter would have still been typical of poetic facility, but there would have

been less force to it. Every capital "A" throughout this long poem is formed in exactly the same manner.

The second illustration is from the signature of Albion W. Tourgee, author of "A Fool's Errand," "Bricks without Straw" etc. A small "a" used as a capital, typical of a high order of intelligence. In its nicely rounded curve, grace and simplicity are shown. Sequence of ideas is revealed in the ready flow of the stroke leading on to the following letter.

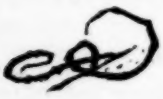
2.

No. 3, from the autograph of J. H. Merle D'Aubigne, author of the celebrated "History of the Reformation," indicates nervous energy, and ardor, as shown in the failure to join the top of the letter. Simplicity and native dignity of character in the unpretentious outline, the using of a small letter as a capital being typical of the highest order of intelligence. Force is in the firm down-stroke.



3.

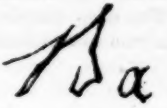
No. 4. Is from a letter of an insignificant person. Here are pretension and want of grace shown in the affected and ridiculous flourish of the loop, which crosses the letter; a certain amount of imagination and movement in the mind, but an imagination not likely to bear good fruit, being so little guided by good taste.



4

The letter "b" is of more frequent occurence than the letter "a" at the commencement of a sentence, and there is a greater variety in the forms which it takes; therefore, more illustrations of this letter will be given.

The capital "B" (5) occurs in the autograph of Sir Samuel Baker, the author and hero of those attractive books of travel that have brought Ceylon etc. home to our doors. Originality, as shown in the eccentric form of the letter, the base being so disproportionate to the head; great tenacity of purpose and strength of will revealed in the striking angles of the letter.



5.

6. The Capital "B" of Bayard, U. S. Senator from Delaware. Very similar in some respects to the preceeding. Strength of will and marked economy are shown in the abrupt terminal.

6.

7. From the autograph of Lord Byron. Strength of will, dogmatism and impatience of contradiction or restraint are shown in the angular lines and in the sweeping upstroke. Great tenderness in the sloping lines, and sequence of ideas in the running of the terminal loop into he next letter. Originality in the bold and peculiar form. Generosity and a lack of finesse in the breadth of the letter and the final loop are both clearly indicated, and the whole writing fully confirms these indications.

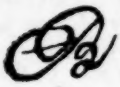
No. 7.

8. Henry Ward Beecher's. Considerable grace and artistic refinement appear in the flowing curves. An easy energy that can accomplish much, and at the same time convey the idea hat it is done without effort, is clearly shown in the bold though gentle strokes of the letter. Openness of disposition in

8.

the width of the letter, and a steady thoughtfulness and sequence of ideas in the understroke leading on to the next letter.

9. From a Frenchman's letter. A great deal of pretension, conceit and affectation, as shown in the numerous flourishes; but a certain kindliness and easiness of temper are denoted by the rounded forms.

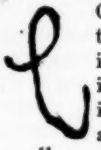

9.

10. Buckle, the historian, from his signature. Absence of affectation, much cultivation and extreme clearness of ideas, shown by the simple form of the letter—the absence of all flourish.

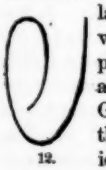
10.

Too great importance can not be attached to the capital letter "C," as it lends itself to indications of vulgarity, pretension, exaggeration and vanity more than most letters.

11. Is from the autograph of R. Gordon Cumming, the great lion hunter and adventurer. It is an inharmonious letter, wanting in proportions, yet revealing in a marked manner imagination, and ardor, activity of mind, strength of will and vivacity.


11.

12. From the signature of Christopher Wordsworth, Bishop of Lincoln, England. There are taste, cultivation, intelligence and simplicity in the graceful curve and utter absence of flourish. Generosity in the fullness of the letter, and sequence of ideas in the easy flow of the pen into the next letter. Ardor and imagination in the boldness of the sweeping upstroke.


12.

13. From the signature of Thomas Cooper, the lecturer and poet. A letter worthy the author of "The Purgatory of Suicides" and "The Paradise of Martyrs." In its plain, rigid simplicity, a high order of intelligence is shown. Tenacity of purpose in the angular shape at the top. The remainder of the writing indicates much originality and poetic grace, combined with an excess of nervous energy and susceptibility.

13.

14. From a letter from a lady, a third rate musician, who imagines herself a second Malibran. Unbridled imagination, with insufferable affectation and pretension. The rest of the writing in the letter is in the same style, without one redeeming feature.

14.

The capital "D" reveals all the pretension, etc. that can be expressed in the letter "C," as it affords scope for an immoderate amount of flourish, a sure sign of affectation, conceit and vanity.

15. Is from the MS. of "The Poet" by William Cullen Bryant. Wonderful grace and poetic ardor shown in the almost perfect contour of the letter. The fact that the curve covers the downstroke is a strong indication of an imaginative mind held in perfect restraint. The ardor is thus under control. Yet it is there in sufficient force to be itself a controlling element, but so combined with grace and refinement that it could not possibly offend by vulgarity or conceit. A most beautiful and harmonious letter, significant of a most beautiful and harmonious character.

15.

16. From the signature of Rev. Roswell D. Hitchcock, D. D., President of the Union Theological Seminary, New York. Energy and firmness are in the bold downstroke. Grace and refinement with a cultivated intelligence are shown in the simple form and easy curve at the base of the letter. Careful thoughtfulness and thoroughness are revealed in the positiveness of this curve.

16.

The capital "E" like "C" lends itself to an exposure of any vanity or conceit that may be possessed by the writer, although not in so large a degree as some other letters.

17, is from the signature of Frances E. Willard, President of the Women's Christian Temperance Union. Originality is shown in the peculiar form of the upper loop, self-reliance in the firm down-strokes, while energy, sequence of ideas and readiness of utterance, combined with poetic ardor are expressed in the graceful manner of uniting this letter to the preceding ones and following it.

17.

18. From the autograph of Maria Edgeworth, the popular writer of an earlier generation, "The mother," as she has been termed, "of Sir Walter Scott's novels." Grace simplicity, refinement and culture revealed in the plain, simple capital. Poetic and æsthetic tastes are clearly shown in the graceful curves. Extreme lucidity of ideas in the clearness of the letters. Freedom from any trace of egotism, affectation or selfishness are also shown in the sloping lines, in their modest firmness. One of the most beautiful and expressive letters ever penned.

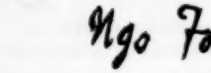
18.

The letter "F" is of less frequent occurrence than "E," yet considerable character is revealed in its construction.

19. From the signature of Sir John Franklin. Poetic grace in the elegance and ease of the curve, tenderness in its slopes, refinement and gentleness in its simplicity, are the leading characteristics of this letter while in

19.

20. From the signature of Ugo Foscolo, the eminent Italian writer. There are originality, economy. firmness and tenacity of purpose revealed in the simple and original capital. In Franklin's signature the ardor of his nature is strongly expressed by the striking upstroke, while in Foscolo's it is shown combined with nervous energy and somewhat of impatience in the hurried upstroke used to make the bar of the "f." The idea is borne out by the main body of the Italian's writing, while on the other hand the indication of economy is contradicted, inasmuch as the letters are well apart and fully made. Great lucidity of ideas is expressed in both of these writings.



20.

21. The capital letter as seen in the signature of the Statesman, Charles James Fox. Originality, imagination, and a certain lazy indifference in the rounded curve of the flying stroke at the top; had it been angular it would have been simple vivacity and ardor. Most of the terminations in Fox's handwriting have these curved terminations, types of a sort of kindly indolence of nature, unless corrected by ascendant lines, which in Fox's writing is not the case.

21.

22. From the MSS. of Gray's epitaph, written by and for himself. Ardor, poetic grace and a refined imagination are shown in the graceful upstroke. A careful. thoughtfulness and consideration are in the extreme care with which the letter is made, and sensitiveness is shown in the sloping lines so fully brought out in the remainder of the writing.

22.

REV. GEORGE W. JAMES, F.R.A.S.

How Women Shake Hands.—A woman's hand-shake is always a study, for if it be loose or faint it indicates a selfish nature, or at least an indifferent one, and if it be strong or masculine, it evinces great openness of heart, and one too, given to hospitality. These facts are so apparent to observers that they are at once conceded. The medium grasp is the true womanly one. But what of the hand itself? An exquisite little hand, soft and white, and neither long nor short, argues fine sensibilities and a gentle, wifely soul. It is the kind of hand that the Sir Walter Raleighs, Crichtons and other chivalric men would delight to kiss. Lean, little, angular Queen Bess

had no such hand, but Mary of Scotland, according to Robertson, had. A short, full hand is Queen Anne-like, and the symbol of much child-bearing. Anne had eighteen children. Queen Victoria owns such a hand. A long hand and a long head go together, and to which may be added genius if the fingers are tapering, yet somewhat large at the joints, and the veins quite full and prominent. The osseus formation is plainly seen through the tightened skin of such hands. Large hands tell of a generous, but a coarse nature. Joan of Arc, extolled by Miss Cleveland in her essays, must have had such hands to have wielded the sword; so must have had Charlotte Corday, who stabbed Marat in his bath-room, for that was a genuine masculine act; so equally had Catherine of Russia. Those hands were antipodal to the hands of Mrs. Browning and Mrs. Norton, and one would say of Sappho. The chubby hands work fast, the long hands work slow and pains-taking, the large hand works heavily but effectively.

COMPOSITE PHOTOGRAPHY.

COMPOSITE photography has been but recently developed. Its object is to produce by photographic art a picture which shall show the features or development common to all the members of a class and subordinate those features which are less common. It is a fallacy that photography gives a perfectly truthful representation of objects, understanding by the term "truthful" a perfect agreement with reality. Photography can, when properly applied, produce truer pictures than all other arts, but it is not absolutely true. Straight lines in the object often appear as curves in the photograph owing to a defect in the lens. In the photograph there is often a greater contrast in light and shade than there is in the object. There are other errors also, but with care they can all be reduced to a minimum, and the picture produced will be truer to nature than can be produced by any other means.

To take a composite photograph of a class of men, the best course to pursue, is to take a picture of each individual in the same position, preferably full-face, and have the distance between the centres of the eyes on the picture exactly the same, regardless of the actual distances in the individuals. Placing these pictures exactly one under another and before the camera, we expose each for a fraction of the time required for all; and the superimposed impressions make one compound impression when pointed from the negative in the ordinary way. A composite profile may be produced in the same manner, using the eye and the opening of the ear as the initial points.

If we apply this process to the study of Phrenology, we certainly will obtain some interesting results, and if carefully carried on, I think, practical benefit is to be obtained. Take for example the family resemblance; we know there is such a thing, and yet, who of us has not found it extremely difficult to name the feature, form, expression or combination of expressions that are common to each member of a family. I claim that by composite photography we get a picture of the family resemblance. If our composite picture is made from pictures of men in all walks of life, we get a picture of the average man. If we wish a picture of the average boy, take all classes of boys, the good, the bad, the quick, the slow, the bright, the dull. If we wish an ideal picture of a good, quick, bright boy, take a composite picture of such boys. Now take one of the bad, slow and dull boys, and the two pictures will show the difference between these two classes of boys as distinctly as pictures will show the difference between a locomotive and a steamboat. Certain boys are bright in mathematics and dull in language, and others the reverse. By composite photography we can determine the development for

each of these classes, and so I think, by taking photographs of men eminent in the various professions, we can make composite pictures which will represent the ideal head of the engineer, the astronomer, the anatomist, the scientist, the theologian, the naturalist, the banker, the merchant and the orator, and so on. If we wish to study the location of a particular faculty, we must take a number of men who are noted for that faculty, and the composite picture will show its position. Take Combativeness for example. If we make a composite picture of the combative engineer, anatomist, scientist, theologian and orator, the qualities that make the engineer, the anatomist or the theologian will be subordinated in the picture to the one quality of Combativeness, and hence we will have a picture of Combativeness. The above is only speculation, and we need data to prove it. Here is a chance for some of my readers who are possessors of amateur photographic outfits of the better order, to devote their leisure not only to their own pleasure, but to the advancement of scientific knowledge. Darwin was willing to walk around the earth to gain one new fact, and here may be any number of facts within your reach.

F. R. B.

CHARLES STEWART PARNELL.

THE government of Great Britain is struggling with a problem that taxes the strength of her greatest statesmen to the extreme. Not within the past twenty-five years has a more critical situation occurred to her, one so full of grave issues, so revolutionary in fact. Ireland for nearly two hundred years, from the memorable battle of the Boyne, when she lost her independence, has been a "thorn in the side" of England, and it can not be denied by one who reviews the manner in which the affairs of the "green isle" have been administered by "cross-channel" authority that its mercurial people have had solid reasons often for their tendency to sedition, revolt and insubordination. England has governed her sister island with a strong hand—from necessity we are told, and rebellious expressions that assumed a dangerous character have been heretofore easily suppressed by the bayonet, but in later years the spirit of Irish freedom has assumed a new phase. It has assailed the lion in her stronghold! It has gradually acquired strength in the field of parliamentary discussion, and to-day it looms up before the English aristocrat and land-owner as a fateful Nemesis, o'er shadowing all other national interests.

The man who has been most prominent in the struggle, whose patient unwearying activity has been most influential in

CHARLES STEWART PARNELL.

bringing about the present crisis in British affairs is Charles Stewart Parnell. We look into his face, as given by the engraver, vainly for intimations of a blood-thirsty temperament, or of a na-

tural bias to malice. There is nothing of the rough or desperado about him—but he looks the quiet, orderly, courteous gentleman. His broad head possesses energy, his elevated crown shows determination and self-reliance. He certainly has a good degree of ambition and courage, but we should expect him to act in a sober even manner, rarely impetuously, by no means intemperately. His head shows the kind of intellect that appreciates facts, is competent to analyze them and to work out their effect in different combinations. Hence his judgments should be generally clear and sound, and win favor among those who know him. With such a chin, such eyes and nose—speaking physiognomically—he should be a self-possessed, steady-going, hospitable, generous man, and one more likely to overreach his purpose or mistake through his sympathies than in any other way.

Mr. Parnell was born in 1846 at Avondale, Wicklow county, Ireland. He is descended from an old English family that crossed over to Ireland years ago.

He was sent to various private schools in his youth, and completed his education at Magdalen College, Cambridge. On being graduated there, he took an extended breathing spell in the United States, and on returning home stepped to the front in his own neighborhood as a man of education, intelligence and spirit would be expected to, and in 1874 was appointed High Sheriff of his county. In the same year he made his first attempt to enter the arena of politics, and the next year he was successful in being elected a representative for the county of Meath; taking his seat in the Halls of Westminister, London. He was modest and quiet at first as beseemed a young member and a novice who wanted to look before he leaped. But in 1876 he took part with great earnestness in some stubborn contests with the Government over measures distasteful to the Irish representatives.

He became soon a leader of the "obstructionists," and of the Irish or Home Rule Party. He was the organizer of the Land League and its first President. All projects having for their object the alleviation of the condition of the Irish people in connection with their rights of property have found Mr. Parnell a zealous co-operator.

He organized the National Irish Land League in 1879. Its objects were—a reduction of rents, and refusal to pay if such a reduction were refused; and finally, an entire change in the land laws, peasant proprietors to be substituted for the landlord, or in other words "to facilitate the obtaining of the ownership of the soil by the occupiers." This organization has greatly promoted the growth of the Home Rule Interest.

In December of the same year, Mr. Parnell came to this country in order to raise money for the immediate relief of Ireland, prostrated with famine, and for the help of the new organization. He lectured in every large town in America, before several State Legislatures, and was permitted to address the House of Representatives at Washington, a privilege accorded but rarely.

Returning to Great Britain, he was elected for three constituencies in Ireland. At the reorganization of the Irish party he was chosen leader, and immediately set to work with a fervid zeal that has produced the bitter fruits now so distasteful to the controlling party at the seat of government. Of course efforts have not been wanting to suppress Mr. Parnell, but tempting offers and menaces have been alike vain. Pretext was found for his arrest and confinement in Kilmainham Gaol, in the fall of 1881, where he was kept for six months, and when released it was to find his cause the stronger. To-day his party in Westminster Hall holds the "balance of power," and we have the spectacle of the two great British political parties—the Liberals and Tories entreating "despised" Irishmen for their support. It is our hope that Ireland will obtain justice.

MOTHER NATURE.

Universal Parent thou,
To thy law we humbly bow,
Glad obey thy stern command
Feasting from thy gracious hand.

False the fancy that thou art
Stranger to the human heart.
All thy blessings full and free
From the earth, the air, the sea,
Give us life, and health, and peace,
For thy bounties never cease.

Gentle sounds that float along—
Blending like some seraph song,
Coming from an unseen shore,
Breathing raptures evermore—
Do their mystic voices raise
To proclaim their grateful praise,

Beauty's Spirit, Angel Queen,
Is in thy dominion seen;
Springtime's dewy dampness shed
On the lily's lifting head;
Summer with its golden sheaves,
Autumn with its yellow leaves,
Winter's silver glories bright,
And the star-bediamond night,
And the sun's be-dazzling rays
Lighting up the fountain sprays;
And the rainbow's lovely form,
Creature of the sun and storm,—
Thus the ever-rolling year
In its glory doth appear.

Thou art Truth's incarnate whole,
And hast thou a conscious soul?
And canst thou in goodness feel,
Sympathy with human weal?

The fair pages of thy book,
On which we forever look,
Form the ages' horoscope,
Filling all our souls with hope
That there is a life above,
Full of tenderness and love.

CHRISTIAN CARRIGER COLLINS.

WAYS AND MEANS.

"WHERE there is a will there is a way," is one of the old saw family, with which most of us made acquaintance very early in life, one for which our regard has been as variable as the circumstances by which we were reminded of it.

The sisterhood, whose banner bears the magical letters N. W. C. T. U., believes in this particular member of the old saw family, with "a faith beautiful to see." Their committees of "ways and means" are backed up by the purpose to do good and the *will* to succeed. Those committees are frequently self-appointed and self-sustaining; very frequently it is "a committee of one" that ventures a new departure. With this prelude, I pray you listen to "a tale out of school," it may encourage some one else to the "likewise," of a good counsellor.

The *Union Signal* office located in Chicago issued an artistic and appropriate calendar for 1886, Miss Francis E. Willard's winning face adorns it, accompanied by her impressive sentiment—"We wage our peaceful war, for God and home and native land." The selections for each day have been judiciously made, from a wide range of excellent and popular authors.

A New York "committee of one" notably given to bright ideas, collected the necessary funds, purchased some Willard calendars, an equal number of Mark Twain scrap books, invited the co-operation of some other active members of the sisterhood and instituted a rather novel holiday excursion to "the Receiving ship" and some others ships then lying in the harbor of New York.

The calendar was presented with the stipulation that it be conspicuously hung in the main cabin, and the boys be alternately detailed to keep the scrap book, and as the calendar shed its daily leaf of mental and moral gold, to enter each one neatly and in consecutive order.

Miss Julia Colman donated a set of "Freedom Cards," and "Leaflets for young people," which were to be inter-

spersed between the months. The freedom cards, are marine views exquisitely gotten up with these words lettered against the sky:

Master of myself I'll be,
This at last is liberty;
I proclaim to all around
Here true freedom I have found.

Free all good things to select,
Free all poisons to reject,
Free from pain and free from debt
Free all honest gains to get.

Free to ride, or row, or race,
Free to walk with sober grace;
Free from pipe and free from bowl,
Free in body, mind and soul.

Free from claiming appetite,
Ruling all my habits right;
Free to serve the God I love,
Free to seek my home above.

"A verse may find him whom a sermon flies," is the motto of the Union's holiday bulletin; acting on that the "leaflets" give brief, interesting sketches of Ben. Franklin, Ayles, the champion sledger, Thomas Edwards, George Stephenson, and other eminent men whose successes were directly traceable to a pure and purposeful youth.

It was a busy, happy day for that party of ladies. Subsequent reports prove that it was "an inspiration" of the best order. It is a pleasant thought, that "Jack," away on the bounding billows will have the pretty reminder of "The waning of the days," toward the coming home, swinging on its appropriate blue ribbon to greet him every "day watch," and cheer him at "even time" if he grows lonely in his restless home, and at the end of the year there will be a Mark Twain treasure casket for future reference, which would gladden the heart of the genial gentleman whose *pseudonym* it bears.

The "ways and means" committee not only need to consider how and when to approach, that *erratic* animal—man, on their mission of love, but *how* to lay their soft hands on his heart without rumpling his pride and raising the ambushed resentfulness which is always on the alert to defend his *liberty*. "Be ye wise as serpents and harmless as doves," said the great head of the Christian Union and the Leader of the White Cross Army.

A. E.

HIS WEAKNESS AND HER FAULT.

CHAPTER I.

BY MRS. M. L. BUTTS.

"WELL, I don't want Harry to be such a stiff old fogy as James is," said Maud Fay to her intimate friend, Grace Morgan.

"I don't see how you can call James an old fogy, especially a stiff one."

"Oh, now I have offended you; forgive me, dear; I didn't mean to."

"Of course I forgive you; nobody could help it when you ask in that bewitching way."

"You could'nt help forgiving anybody."

"I should find it very hard to pardon Harry, if he shouldn't make you happy."

"Pardon Harry, if he shouldn't make me happy! Now Grace, that is a little too much. Harry can't help making me happy; you know he loves me dearly."

"And yet Maud, darling, there have been men as tender, and generous, and loveable as Harry, who have wrecked their own lives and the lives of wife and children. I will speak at the risk of making you angry, and you shall listen. Harry is brilliant and talented, and has great social power; but Maud you know he can not resist when certain strong influences are brought to bear upon him; he confessed to me that he can't get away from the fellows when they urge him to this or that excess."

"Oh, that will all come right when

we are married; I can do anything I please with him, he says I can."

"Maudy, I wish I could make you see that a man must control himself, or he will never be permanently controlled."

"But, I am himself, so its all the same thing. Now don't frown; you can't make a philosopher of me, nor of Harry; I'm not afraid so long as we love each other."

"But if Harry should turn out a weak, irresponsible man, he would be quite different from the ideal you love and what would happen then?"

"Oh please Grace, have mercy. I'll stop your mouth with kisses, and then you can't say such horrid things!" and Maud put a pair of very white, dimpled arms around Grace's neck and stopped the obnoxious words.

"Well Maud, I won't say any more this time," continued Grace as soon as the sweet pressure was removed. "You must try life for yourself, and may God help us all; but remember this: God helps us through the powers he has given us. The kind and abundance of that harvest is according to the wisdom and vigor, exercised at seed-time."

"How admirably you and James are suited to each other," said Maud, shaking out the flounces of her pretty blue muslin and adjusting her blonde braids, "you two will never go wrong."

"That sentence doesn't deserve an answer," replied Grace, smiling.

"Well, let's change the subject. What are you going to wear to the party to night?"

"My gray silk with my black lace point draped and a lace *fichu*."

"How very sober! wont you add any color?"

"Perhaps so; I had'nt thought about it. I'll loop the lace with pink roses and buds, if you approve."

"Charming! And you will wear roses in your hair! You have splendid taste after all!"

Complimentary with a qualification!

"After all what?"

"All your particular notions about temperance, and religion, and"—

"And what?"

"Oh I dont know."

"I suppose not. What are you going to wear?"

"My blue silk, with tulle overdress, looped with convolvulus blossoms, and coiffure to match."

"That will be both pretty and becoming; I like to see you in blue."

"Thank you! I am always sure of a costume if it suits you. In fact you have formed my taste, or developed it, or whatever you call it. How do you always know what is just right in every department?"

"O Maud you go a great deal too far in your enthusiasm for your friends."

"Well, tell me how you know what you do know; we'll assume that it is'nt much, just to please you."

"Did you ever think Maudy, that beauty and duty come from the same source?"

"What a question, Miss Oracle! It is worthy of you. No, I confess I never had such a thought. Will you tell me what you mean?"

"I mean that beauty has its source in God; and duty is but a name for God's voice in the soul. Duty refines and educates, and leads us slowly and surely into the realm of beauty."

"Yes, Grace, I see," said Maud, a sweet thoughtful smile, displacing for a moment her usual expression of childish gaiety; "you are obedient to duty and you find out beauty but I am quite another kind of person; I must be content to copy. I really must go, now, good bye dear; I shall see you to-night."

"And you're not convinced about Harry?" said Grace.

"No, I can't see that Harry is in any danger; all the young men in his set drink wine; I think he can take care of himself. It's of no use to worry, Grace; don't look so serious; Harry will come out all right, see if he don't."

The friends parted, to meet in the

evening, at Mrs. Stanton's elegant home.

Among all the high-bred, cultivated guests, none were greater favorites than Maud and Grace, and there was good reason for the love that flowed out to them. Grace was good, talented and elegant, the daughter of a good man, and the betrothed of one of the most successful young business men in the city, Little Maud Fay was an orphan, and lived with her uncle, who had nothing remarkable to bring him into notice, but she was such a bright, fresh bewitching rosebud of a girl, that her society was sought for as we seek sunshine.

The brilliant company chatted and promenaded, listened to music and partook of delicious refreshments, after the manner of party-goers in general.

Towards the middle of the evening a group formed about Grace and Maud, and in the course of the conversation, the subject of temperance came up.

"I know what Grace thinks about wine drinking," said Maud, mischievously.

"So do I" said Harry.

"But you don't know what she thinks about you," continued Maud, "Hush! dear," said Grace, "She thinks, that you are in danger so long as you continue to take wine."

Harry flushed a little, and bowing to Grace, said, with a touch of sarcasm in his tone: "Thank you Miss Fanton, for your friendly warning, and allow me to ask upon what grounds you base your fears."

"I am sorry that Maud has introduced the subject at such an inopportune time," answered Grace; "but since you ask me, I am willing to answer, I think that a man should be sure of his ability to control himself, before he tampers with anything that has an element of danger in it; upon the same grounds I think a child should not touch gunpowder, or play with sharp knives."

"I must infer then, that you consider me imperfect in self-control."

"Upon your own showing Harry," replied Grace very kindly," your lack of self-control I am not disposed to criticise at your age. Men are seldom masters of themselves; my point is, that till you have acquired self-mastery, you should put yourself out of danger."

"That is well said," replied a gentleman who stood by; "but Miss Fanton is that your only argument, against the use of wine."

"I would wish to leave men free, as far as possible; I would apply motives that touch themselves, and then allow them to act rightly toward others from choice; but there is one argument that applies to all actions in every department of life; the argument of genuine regard for those who may be weaker than ourselves."

"And that is why you never touch wine, I suppose," said this gentleman addressed.

"I try" said Grace, "in this matter as in all others to throw my influence on the side of the tempted and struggling; but I have no desire to make my actions a model for others, I say this to myself! If all women should discountenance wine drinking, for the sake of those who are likely to take too much there would be a social revolution, What then is my obvious duty? To do myself, what I wish done by society."

"That is the right doctrine" murmured several of the company." Miss Fanton knows what she's talking about, as usual."

"And yet," said Harry Hubble, "we shall go on acting just the same; only the heroic soul puts belief in action and we are sorry heroes; eh, Maudy?"

"You are hero enough for me" said Maud in a low tone to her lover.

"And you don't agree with Grace?" asked Harry.

"Yes, it seems right, but what's the use of making such a fuss. I'm sure you'll never go too far; and one can't take care of everybody."

"And yet Maud, I'm not the fellow

you take me for. I like to have you think well of me; but I wish you'd take my weaknesses into account a little more; you'll be disappointed by and by, I'm afraid!"

Maud's only answer was a look of tender, confident love.

"You won't believe me, I assure you Grace knows me much better than you do; she has reason to fear for your happiness."

By this time the lovers were separated from the rest of the group, and Maud was at liberty to clasp her little hands around Harry's arm, and protest against any more such talk. She pouted a little, and said in the infantine way that her friends found so charming. "O, if you are going to stop loving me, Harry, of course I shall not be happy."

Harry could only ejaculate fervently:

"Stop loving you Maud, as if I could ever do that!"

Thus Grace Fanton's arrow of truth was plucked out by Maud's own tender hand, just as Harry was beginning to feel the needed probe.

The evening passed successfully; everybody was satisfied, and at last the weary pleasure seekers began to think of home. Among the first to go to the dressing room was Maud. When she was ready, in her street wrappings, she came down stairs, and waited in a little ante-room, for a servant to fetch Harry. She expected him in five minutes, at most; but fifteen minutes passed, and just as she was growing uncontrollably nervous James Morgan came.

"Where's Harry? What *is* the matter?" she almost screamed, springing up, and seizing James' arm.

"Nothing serious Maud," Harry has had a sudden attack of—of—"

"Of what? Let me go to him. I will go to him!"

"It is impossible," said James, holding the excited girl firmly, sit down and be calm: upon my word as a gentleman, there is nothing serious the matter, but you can not see Harry, for he has already gone home attended by one of his friends. Stay here one moment. I will bring Grace, and we will all go immediately."

Poor Maud had no choice but obedience; as soon as James was out of the room, her emotion found an outlet in a flood of hysterical tears, and she grew more and more angry every minute at Harry's friends for separating her from him when he most needed her, as she thought.

In the meantime, James explained the situation rapidly to Grace.

"You see, the foolish boy got to telling stories, and the gentlemen crowded about him, and the wine went round as usual you know how brilliant Harry is under such circumstances; he grows more and more excited, and wit flashes from him as light from a star."

"And he drank too much" said Maud, sorrowfully. "O what a pity!"

There was no need for further words. Grace understood Harry better perhaps than any one else; understood his faults as well as his virtues, and therefore was prepared to love him wisely.

Maud began to complain bitterly when her friends appeared.

"I wouldn't have treated you so, indeed I wouldn't," she said, beginning to weep again. Let me go to him now, wont you? Please, Grace! you and James go with me. I can't wait till morning to see him."

"Dear Maud," replied Grace, "believe me, it is not necessary or best for you to go. You will see him to-morrow, and then you can ask all the questions you please, and scold Harry to your heart's content for getting sick."

"I scold my darling! Never. You don't know me. I only wish I had a right to go to him."

And so by dint of coaxing and firm denial, Maud was induced to go home.

Once alone in her own room, she gave free scope to fear, and passed a sleepless night.

To be continued.

A "PELHAM" ON THE QUARTER DECK.

ONE naval officer, Captain Ormiston, in the service of the British Government tells a good story of another officer in the same service:

"During the recent war in Egypt I took out supplies to Alexandria, and after discharging, received orders to go to Berwickport for a charter. I knew nothing of the place and had no chart of the north coast aboard of the steamer. None of the Merchant captains could supply me, and I finally concluded to apply to the Captain of the Ironclad Invincible that lay close alongside of us as a last chance. I pulled up to the gangway, and I was met by one of the officers who said I would have to wait a few moments as the crew were going to 'quarters.' As he spoke the boatswain's whistle was heard clear and sharp above the hoarse call of his mates. Immediately, as if by magic, yards began to come down and to go aloft, the blue jackets rushing to and fro on deck, and of a sudden bang went one of the eighty-ton guns fit to take your head off. After the men were 'piped down' I made my way up to the bridge where I found a little light-haired man trotting up and down. His hat was cocked roguishly on the side of his head; he wore long side-whiskers, and an eyeglass dangled from a gold chain about his neck. As I approached he halted suddenly, whirled about on one foot, screwed his eyeglass into his eye, and in a sweet little piping voice, said:

"'My dear fellah, what can aw do faw you?' He cut such a figure that I was tempted to laugh in his face, but controlling myself I stated my errand. Immediately the little man had all the quartermasters running to find his subofficers and in a jiffy they returned, and touching their caps, they began to report that Mr. A. was ashore on liberty, Mr. B. had gone to Cairo, and that Mr. C. was away in the first cutter, and so on. He then turned to me and rubbing his hands, said: 'My deah fellah, Berwickport is a very fine place, aw assuah you; you will find no trouble in getting in; aw was there once myself.' Thinks I, what an ass this man is, and touching my hat I was about to go, when a big, sailor-looking officer appeared and informed the captain that there was no chart of the British north coast aboard the ship. Thanking the captain for his trouble, I went over the side and pulled aboard my own ship.

"No doubt you would have agreed with me that the Captain was no sailor and a fool besides, but you would have been mistaken, as I was. The next night the Invincible went to sea with a man in the chains heaving the lead. Of a sudden the breast-strap parted and away went the man overboard. The same little Captain was on the bridge. Instantly the foppish airs were gone and the true sailor appeared. Pulling the bells, he stopped the vessel, and just as he stood, oilskins and all on, went overboard to rescue his man. One of his lieutenants and a quartermaster jumped overboard to assist their commander. Instantly all was in an uproar. All hands were on deck. All the boats were lowered, and the four men in a few minutes were safe on board the Invincible. The leadsman was entangled in the line and would certainly have drowned but for the prompt assistance of the Captain. In addition, this was the fourth man that same officer had rescued from drowning. His crew swore by him. He was a peer of the realm, and a better officer does not walk the deck of an English ship today."

SCIENCE AND RELIGION.—The antagonism between science and religion, about which we hear so much, appears to me to be purely factitious—fabricated, on the one hand, by short-sighted religious people who confound a certain branch of science, theology, with relig-

ion; and on the other, by equally short-sighted scientific people who forget that science takes for its province only that which is susceptible of clear intellectual comprehension, and that outside the boundaries of that province they must be content with imagination, with hope, and with ignorance.

It seems to me that the moral and intellectual life of the civilized nations of Europe is the product of that interaction, sometimes in the way of antagonism, sometimes in that of profitable interchange, of the Semitic and the Aryan races, which commenced with the dawn of history, when Greek and Phœnician came in contact, and has been continued by Carthaginian and Roman, by Jew and Gentile, down to the present day. Our art (except, perhaps, music) and our science are the contributions of the Aryan; but the essence of our religion is derived from the Semite. In the eighth century, B. C., in the heart of a world of idolatrous polytheists, the Hebrew prophets put forth a conception of religion which appears to me to be as wonderful an inspiration of genius as the art of Pheidias or the science of Aristotle.

"And what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?"

If any so-called religion takes away from this great saying of Micah, I think it wantonly mutilates, while, if it adds thereto, I think it obscures, the perfect ideal of religion.

But what extent of knowledge, what acuteness of scientific criticism, can touch this, if any one possessed of knowledge or acuteness could be absurd enough to make the attempt? Will the progress of research prove that justice is worthless, and mercy hateful? will it ever soften bitter contrast between our actions and our aspirations? or show us the bounds of the universe, and bid us say, Go to, now we comprehend the infinite?

A faculty of wrath lay in those ancient Israelites, and surely the prophet's staff would have made swift acquaintance with the head of the scholar who had asked Micah whether, peradventure, the Lord further required of him an implicit belief in the accuracy of the cosmogony of Genesis!—Prof. Huxley, *Popular Science Monthly.*

JONATHAN CARVER, THE AMERICAN EXPLORER.

THE earliest American-born traveler of note was Jonathan Carver who first saw the light of life in Connecticut, in 1732. He was educated for the medical profession, but chose the military art as a vocation, and led a company of Connecticut provincials in some of the expeditions against the French in Northern New York from 1756 to 1759. He served with reputation until the peace in 1763, and soon afterward he formed the bold resolution to explore the Continent of America from Lake Superior to the Pacific Ocean. He also hoped thereby to be instrumental in finding the long-sought northwest passage to India.

Mr. Carver left Michillimackinac in the autumn of 1756. That was the most westerly of the British military posts. Bearing a few gifts for the Indians, he penetrated the present Minnesota Territory to the head-waters of the St. Pierre, more than a thousand miles from the point of his departure. He was foiled in his grand design; and after spending some time on the northern and eastern shores of Lake Superior, exploring its bays and tributaries, carefully observing the productions of nature and the habits of the Indians; he returned to the settlements and laid his papers before the Governor of Massachusetts, at Boston. He had been absent about two years and had traveled over seven thousand miles.

Having carefully arranged his journals and charts, Mr. Carver went to

England for the purpose of publishing them. He petitioned the king for a reimbursement of funds which he had spent in the service of the government, in these explorations, but his claims were deferred. He received permission, however, to publish his papers and he sold them to a bookseller. Just as they were ready for the press, he was ordered to deliver all his charts and papers into the hands of the Commissioners of Plantations, and he was compelled to repurchase them from the bookseller. Ten years elapsed before he was allowed to lay them before the public. In disappointment and poverty, he became a lottery clerk; and finally, in 1799, his necessities induced him to sell his name to a historical compilation, published in folio and entitled "The Universal Traveller." This act caused the loss of his clerkship, and many professed friends abandoned him. He died in the suburbs of London in extreme want in 1780 at the age of only forty-eight years. An addition of his travels was published in Boston in 1797.

LOSSING.

THE PHYSICAL CONDITIONS OF CONSCIOUSNESS.

IF we place a drop of acid on the skin of the lumbar region of a decapitated frog we immediately see the foot on the corresponding side lifted to scratch it and rub the spot irritated by the acid. If we repeat the experiment after having amputated the foot, the application of the acid puts the frog into an evident state of agitation. It makes fruitless efforts with the stump, hesitates, stops, seems to reflect and ends by employing the other foot to wipe off the acid. Pflueger was so struck by this phenomenon that he attributed not only consciousness, but even intelligence and will to the medullary reflexes. These opinions were adopted by Auerbach in Germany and Lewes in England. But since 1858 Schiff expressed himself opposed to this interpretation. He has the merit of having recognized, on the one hand that the facts observed in man in consequence of traumatic lesions of the cord do not permit us to conclude the *unconsciousness* of the spinal cord. For in these cases the nervous communication between the cord and brain being interrupted, the latter can in no way perceive what takes place in the cord; it is exactly as though these two organs belonged to two individuals—the brain of Paul does not know what occurs in the cord of Peter. On the other hand, the visible reactions being the only objective sign which reveals to us the presence of a conscious sensation in any organism except our own, we have no right to refuse all trace of consciousness to the spinal cord. But whatever may be the degree of consciousness it possesses, we can by the following reasoning refuse the property of intention and will to the spinal reactions; in fact, we give this name to movements of which we have an anticipated representation, of which we foresee the form, the energy, the succession and the effect; but the spinal cord of a decapitated animal can not have these representations because the destruction of every sensory centre necessitates the abolition of the corresponding representations, and because decapitation is the simultaneous destruction of all these centres; the cord is therefore deprived of the psychical materials which combined into a whole, confer on any given moment the special character which we indicate by the word voluntary. So true is this that we do not give this name to movements which, notwithstanding the integrity of the nervous centres are accomplished in the absence of all this combination of representations without prevision and without consciousness; we then call them automatic. I would further say the examples of un-

conscious movements accomplished by ourselves seem to me the *only* facts favoring the possibility of unconscious nervous reaction.

This reasoning is perfectly applicable to the sensori-motor centres ; they are accessible to the multiplicity of impressions which the organism can receive from the external world by the organs of sense, and they consequently react by series or groups of movements to the series or groups of impressions which stimulate them. Thus, for example, a pigeon deprived of the hemispheres, stands on the ground or perches on a stick, maintains its equilibrium when the stick is rotated, rises if placed on its back, flies if thrown in the air and does not fall down after having flown but perches on any object, and so on ; in some favorable cases it even ends by learning to eat and drink by itself ; it then continues to live and behave almost like a normal pigeon, the only difference being that it is more apathetic, that it manifests less initiativeness, that it seems to "want spontaneity," as A. Bain would say. Seeing that the analogy between sensori-motor and ideo-motor acts is much greater than that between the first and the spinal reactions, we may *a fortiori* conclude that the opinion is not maintainable, according to which the activity of these centres is also unconscious.

Now, what is the degree of consciousness which we can attribute to the spinal cord and to the sensori-motor ganglia? By degree I mean simultaneously the quantity and quality of consciousness, that is, its intensity and the psychical dignity of its contents.

On this subject accident has furnished me with information which I think important. During a certain period of my life I suffered from frequent syncope, and I had the opportunity of observing on myself the psychical phenomenology of the return to consciousness. During syncope there is absolute psychical non-existence, total absence of all consciousness ; then one begins to have a vague, unlimited, infinite feeling, a feeling of existence in general without any delineation of one's own individuality without the least trace of any distinction between the ego and the non-ego ; one is then "an organic part of nature," having the consciousness of the fact of one's existence, but having none of the fact of his organic unity ; one has, in a word, an impersonal consciousness. This feeling may be agreeable if the syncope is not due to violent pain, and very disagreeable if it is : this is the only possible distinction, one feels that he is living and enjoying, or living and suffering without knowing why he enjoys or suffers, and without knowing the seat of this sentiment. A great number of facts make it probable that in this phase of return to consciousness, the extremities may execute the spinal reflexes in response to tactile or painful irritations, although the cephalic centres are certainly still incapable of becoming active. As a result of this first observation, I believe that the spinal marrow, suddenly separated from the cephalic centres by decapitation, is reduced to the elementary form of sensation without any discrimination, without localization, without knowledge of the different parts of the ego or ego itself, and accompanied only by a vague, diffuse, impersonal consciousness. Such, no doubt, is the only form of consciousness which we can admit in the minute beings which are wanting in special organs. It is also the only one which savants unanimously attribute to the newly-born child before he has had time to learn by the education of senses and the association of impressions, the topography of the surface of his body and to distinguish its different parts from one another and from the objects which do not belong to it.

I think, consequently, that the spinal cord of a decapitated animal would react to any impression indifferently by any movement, perhaps by a series of irregular contractions of all the muscles (as it really often does in the newly-born), if it

did not contain a great number of direct communications from the afferent to the efferent nerves, communications previously developed during the infinitely long evolution of living beings and become hereditary or else acquired by the individual himself, but in every case preformed; that is to say, ready to react immediately in a given manner to a given irritation. I believe that in relatively simple cases, those in which the cord gives an immediate and limited right re-action to a particular stimulus by means of a preformed mechanism, the spinal consciousness is reduced to the minimum of intensity or to zero; because then the transmission of the stimulus is accomplished with the maximum of rapidity and facility by nervous paths perfectly adapted thereto. On the contrary, in relatively complicated cases, like that of the decapitated frog whose leg we amputate to oblige it to execute less automatic reactions, or like that of the tritons of Flourens whose posterior extremities after total section of the cord, gradually learned to co-ordinate their irregular reaction with the movements of locomotion; in these cases, I say, the spinal consciousness attains its maximum of intensity, because in these cases the central elements offer a considerable resistance to the stimulus which, not finding a means of escape close at hand, radiates and produces an extended, profound and lasting disintegration up to the moment when it succeeds in making new paths duly adapted to the unusual circumstances; these paths once sufficiently elaborated, every act is accomplished more quickly, more easily, more automatically, less consciously.

But it must not be forgotten that we have always spoken of decapitated animals; in the normal animal it is not quite the same. If an excitation which affects the spinal cord is not immediately and entirely transmitted and discharged in the shape of automatic reaction, nothing obliges it to remain in the cord and there to effect the adaptation of new central tracks; it thus follows that in the non-mutilated animal the spinal consciousness will never be called upon to manifest itself except in some exceptional cases, as that of animals who have no cephalic centres—the amphioxus for example. It is evident that in such animals the cord must accomplish all the functions devolving upon the nervous centres. But during the course of the evolution of human beings, the anterior portion of the cord undergoes an extraordinary development and becomes cephalic; the central attributes follow the same course; they gradually abandon the spinal centres which become more and more subordinate, and end by being only organs of transmission and of some definitely organized reflex acts. The central attributes gradually become the more and more exclusive privilege of the new cephalic organs which alone exhibit a complexity and specialization of structure capable of corresponding to the more and more varied necessities of a more and more complicated organism. It follows that the spinal consciousness must be more intense in the inferior vertebrates and less intense in the superior. It must be at its maximum in the amphioxus and its minimum in man.

Let us now proceed to the sensori-motor centres at the base of the brain. I have already said that the observation of animals deprived of their cerebral lobes leads us in the majority of cases, to the conclusion that the movements which they execute apparently without intelligence and without will are yet not unconscious; on the contrary, analogy and especially the arguments which we have quoted in support of spinal consciousness, oblige us to consider them as habitually conscious reactions. Maudesley himself, so inclined to deny consciousness wherever it is possible to deny it, and so disposed to consider animals as unconscious machines, is obliged to recognize, notwithstanding some contradictions to which I will refer later on, that in regard at least to the

superior vertebrates in the sensori-motor centres enjoy a certain degree of consciousness:

"For it may well be that organs which are only a little lower in dignity than the supreme cerebral centres, which are essential to the development of their function, and are in such intimate functional relation with them throughout life that a functional separation appears to be a pure abstraction, do possess that property which is most highly but not exclusively developed in the higher centres."—("Physiology of Mind," p. 243).

For the same reason he grants them, though unwillingly, what he calls a kind of sensory perception, which he considers the germ or rudiment of intellectual perception, the exclusive privilege of the cortical centres. So it is no longer the fact of consciousness which is placed in doubt; we have to deal with a more subtile distinction relative to the quality of the contents of consciousness.

From the chaos of the first phase which is characterized, as you remember, by a confused impersonal consciousness, without any trace of localization, without discrimination of definite sensations, vague and obscure differences gradually take shape; one begins to see and to hear; but, what is very curious, the sounds and colors seem to arise within one's self, without one having the least idea of their external origin; further, there is no connection between the different sounds and the different colors; each of these sensations is felt by itself; thence results an inexpressible confusion, accompanied by a complete stupefaction of the individual; at this moment the sensory centres have regained sensibility, but they are so only to the impressions which come directly from the exterior, each centre for itself. The intercentral reflex action is not yet re-established, the different sensations do not combine with one another; there thus results the total want of localization, of distinction between the ego and the non-ego, and of projection beyond the origin of the impressions; one has stupid sensations, if I may express myself so, that is to say, sensations which, because they remain isolated, can not be known, but only felt. Next follows the re-establishment of the intercentral reflexes; their activity fuses into what we call the *sensorium commune*; the different sensations begin to influence one another, and, consequently, to become reciprocally determinate, defined and localized; and there results the distinct appearance of the consciousness of the unity of the ego.

But this consciousness is at first only an intelligent feeling, which merely expresses the fact of the organic unity of the subject, and from which a clear notion of the relation of himself to his surroundings is still entirely absent. In this stage of awaking I clearly felt I was myself, and that my auditory and visual sensations came from objects which did not form a part of myself; but I did not understand what was happening, nor what had happened, why I was there, stretched on the ground or a sofa, nor why the persons present surrounded me eagerly, unbuttoned my shirt, threw cold water on my face; that was because these are complex perceptions of a higher order, genuine intellectual perceptions resulting from the synergic action of the cortical centres; they can only, therefore, reappear with the complete re-establishment of these centres, which are the first to suffer and the last to recover their functional integrity. Later on, at a given moment, at the end of a variable, but always appreciable interval, filled by the strange stupor already described, the cortical centres are suddenly re-established, their nutrition having resumed its normal course; at the same moment the mind is traversed, like a flash of lightning, by the following thought; "Ah, that was another fainting fit." From this moment intelligence is completely re-established, it seizes the complicated relations of the situation, and resumes the command which a temporary insufficiency of cerebral nutrition

had deprived it of. Now, what conclusions can we draw herr? In the first place, it seems evident that the sensory centres, taken individually, can be conscious each in its particular mode of sensation, but only, as I have said, in a stupid manner, that is to say, without combination or correlation between the different sensations, consequently without their localization—without projection of their origin beyond the ego—and, consequently, finally, without distinction between the ego and the non-ego.

In the second place, it is evident that the sensory centres, combined in the *sensorium commune*, if not anatomically, at least functionally, as the mechanism of inter-central reflex action of the synthesis of the different specific sensations of external origin, and of the internal induction of reflex sensations producing each other) may be conscious in an elementarily rational manner. Not only can they feel, but they can know that what feels is not what produces sensation; they can consequently have individual consciousness in its most elementary form, that is as a mere sentiment of the unity of the ego, but can not form a notion of the relations of this ego with what surrounds it, nor understand the circumstances in which it finds itself.

We see all this in a great analogy to what occurs in the spinal cord of a decapitated animal; very probably, in an animal deprived only of the cerebral hemispheres; the sensori-motor centres can at first accomplish only the acts, however complex they may seem to us, which are due to a preformed mechanism, hereditary or acquired; their reactions would consequently, in the majority of cases, be automatic, and slightly or not at all conscious. Just as the spinal cord in certain favorable cases, for example in the salamanders of Flourens, may learn to execute reactions which at first were impossible, so the sensori-motor centers learn in certain cases (to tell the truth very rare ones, for example in the pigeons deprived of their hemispheres) to execute all the coordinate movements necessary for the maintenance of the life of the individual; and we can not doubt that during the period of learning their consciousness must be carried to the maximum intensity of which it is capable, to diminish afterward gradually and in proportion as the new associations, by repetition and habit, adapt the nervous paths and render the inter-central transmission rapid and easy.—PROF. A. HERZEN of Lausanne.—*From the Journal of Mental Science.*

GENERAL WINFIELD SCOTT HANCOCK.

ANOTHER of our soldiers has fallen in the way, soon following Grant and McClellan who were fellow associates of his—classmates at West Point. The announcement of Gen. Hancock's death, without any previous warning of a serious illness, took the American people by surprise, and has awakened a general expression of true sorrow everywhere.

Gen. Hancock's career has been entirely that of the soldier, and is eminently creditable. He was born in Montgomery County, Pa, on the 14th of February, 1824. His grandfathers on both sides took part in the war of the Revolution, and his father served in the war of 1812. Arrived at a suitable age young Hancock entered the military academy at West Point, whence he was graduated in 1844. In his class were Generals Grant, McClellan, Burnside, Reynolds, and W. F. Smith.

Cadet Hancock was appointed second lieutenant in the Sixth infantry, and served nearly three years on frontier duty at Forts Towsan and Washita, Indian Territory, receiving his commission of

full second lieutenant June 18, 1846. Early in 1847 he was detached upon recruiting service for the Mexican war, and accompanied the army which landed at Vera Cruz, March 9, 1847. Under command of his namesake, General Winfield Scott, August, 20, he won his brevet as first lieutenant "for gallant and meritorious conduct."

In 1848 Lieutenant Hancock was assigned to duty in the Quartermaster's Department, in which he remained until the breaking out of the civil war. Though breveted first lieutenant on the field of Cherubusco, Hancock did not get his full lieutenancy until January 27, 1853. He was made a staff captain November 7, 1855. In August 1861, he was ordered to report to the Quartermaster-General at Washington. Soon after the commencement of the late war, he was commissioned by President Lincoln a brigadier-general of volunteers, September 23, 1861 and given command of the first brigade of General "Baldy" Smith's division of the Army of the Potomac.

His brigade saw its first active service under General McClellan, and participated in the action of Lee's Mills, Va., April 16, during the siege of Yorktown. At the battle of Williamsburg, May 5, 1862, General Hancock had a separate and detached command of five infantry regiments and two batteries of artillery. The enemy attacked his forces in the evening of that day, after they had successfully repulsed Hooker's assault on the Union left. They were met by Hancock at the point of the bayonet and

WINFIELD SCOTT HANCOCK.

driven, from the field after a fierce combat. For this service he was breveted major United States Army, his conduct being described by the Commanding General as "brilliant in the extreme."

During the Maryland campaign he was intrusted with several important commands, distinguishing himself especially at Antietam. November 29, 1862, he was made major-general of volunteers, and commanded the First division of the Second corps at Fredericksburg, December 13, when in the desperate assault upon Marye's Heights, his division lost 2,014 men out of a total of 5,000 taken into battle, and he was wounded himself. He commanded the same division in the unfortunate battle of Chancellorsville, May 1, 2, and 3, when his horse was shot under him.

At the great battle of Gettysburg, General Hancock's part was very important, commanding the rear guard as the Union army advanced. The last day of battle, July 3d, General Hancock received and repulsed the charge of Longstreet's column, 18,000 strong. This, in the general opinion of military authority, decided the issue of the battle. General Hancock received a dangerous wound from which he slowly recovered, and then returned to active duty and participated in the advance upon Richmond organized by General Grant, his corps occupying a prominent position and taking part in the successive battles.

In the year 1867, General Hancock was appointed by President Johnson to the Fifth military district, composed of Louisiana and Texas, to succeed Generals Sheridan and Mower.

He was afterward sent as commander of a military division to Dakota, where he remained from 1869 to 1872. In the latter year he was appointed commander of the military division of the Atlantic, with headquarters in New York city, where he has since resided. The Democratic nomination for Governor of Pennsylvania was tendered him in 1869, but declined. He was spoken of for the Presidential nomination at Baltimore in 1872, and later was nominated at the Democratic convention held in 1880.

Gen. Winfield Scott Hancock was a tall man, but of full proportions, impressive and soldierly, his complexion light with blue eyes. His portrait indicates a predominance of the Vital temperament; the chest being broad and deep, the neck uncommonly large, the cheek full and heavy—he was said to weigh 230 pounds or more. The features were relatively small, as if he inherited his mother's mental and physical constitution. He evidently had too much flesh for perfect health, for the promise of long life, and also for the best mental conditions.

He had the sign of large Language; the fullness under the eye may, however, have been enhanced by the plethoric state of his general constitution, that which gives the fullness seen in the cheek, and the width to the side face.

Taking the portrait as our authority his perceptives appear to have been full, enabling him to gather facts and information quite readily, and to hold them for use when occasion requires it. The reasoning organs appear to have been cultivated in later years; his pictures taken fifteen years ago show less of Causality, less of fullness at the upper part of the forehead.

There appears to have been rather strong Cautiousness and Secretiveness, the first giving prudence and the second policy, and though he might talk pretty freely, he was not likely to say more than his cause required; would be reticent and reserved in his statements if necessary.

There was a good degree of Order and Calculation, considerable mechanical talent — languages and literature, power of statement and expression would be more manifest in him than comprehensive, theoretic power adapted to largeness of planning and appreciation of remote causes and consequences. If he had been a lawyer or legislator, he would have advocated and pushed a bill with more skill and tact than he could have organized or initiated measures.

He had great ambition, being inclined to do and suffer much to attain and keep position, esteem, and popularity. His temperament had a tendency to anchor him to the physical, the tangible, and the earthly; he was not strongly theoretical, sentimental, or disposed to live in the realm of the ideal. He had a warm social nature, was fond of his friends, and very affectionate in his domestic attachment; those who ranked "upon his list of friends" must have deemed him genial, hearty, companionable, and devoted. In an estimate of his character a few years ago we said that it seemed to us that it would be well for General Hancock to modify his apparent habits to "live on 'half rations,' and by so doing he would live longer." He was too plethoric, too heavy, "by losing say fifty pounds of flesh he would have a clearer mind and a better chance for long life."

THE POISON PROBLEM.

THE advantages of the inductive method of logic are strikingly illustrated by its influence on the progress of dogmatic reforms. In the Middle Ages the march of such reforms in their advance from special to general facts was amazingly slow. Long after the introduction of humanitarian ethics had circumscribed the authority of military chieftains and led to the recognition of the more essential civil rights, it was still deemed perfectly legitimate to enslave aliens, and for a full century after the privileges of humanity had been extended beyond the political boundaries of Christian Europe, they were still denied to the pagan Ethiopian. Religious liberty, too, is a plant of slow growth; but Francis Bacon has not lived quite in vain, and the civilized part of mankind has at last reached the conclusion that no man has a right to meddle with the metaphysical theories of his fellow-man.

The most remarkable instance of long-deferred generalization in the recognition of a plain truth is therefore certainly the history of the Temperance Movement. As much as two hundred years ago Dr. Hermann Bœrhaave inveighed against "French high wines and adulterated liquors," but recommended an occasional glass of good old *Schiedam*. Dr. Zimmerman, the medical adviser of Frederick the Great, induced his royal patron to renounce the use of wine, and called even the Johannisberg (a famous plantation of Rhenish grapes) "a fountain-head of gout and sorrow," but does not object to beer, or to cider or coffee. Strong coffee is still the pet beverage of many so-called total abstainers. Many Mohammedans who would think a glass of wine a dreadful pollution, dream away half their existence in opium slumbers. I know a zealous Temperance lecturer who drinks coffee and strong black tea, and smokes about eight cigars a day. He would indignantly repudiate the charge of inconsistent conduct, and yet the time is near when that inconsistency will appear as surprising as that of the American reformers who in 1788 built in Boston a brewery "for the accommodation of the Temperance Society." They warred fiercely against alcoholism, but failed to see that beer-drinking is only a modified form of that vice; and with a hardly less incomprehensible short-sightedness our temperance apostles fail to see that alcoholism itself is nothing but a special form of the poison habit. For in their action upon the human organism foods and poisons can be plainly distinguished by the following tests:

1. *As a rule the attractiveness of alimentary substances is proportional to the degree of their healthfulness and*

their nutritive value. To the children of nature, hurtful things are repulsive; beneficial things attractive. That instinct adapts itself even to abnormal circumstances. Nurslings, deprived of their mother's milk, instinctively appreciate the proper component parts of artificial surrogates. Sailors in the tropics thirst after fruit, after refrigerating fluids, after fresh vegetables. In the polar seas they crave calorific food—oil or fat. But in no climate on earth is man afflicted with an innate craving after brandy. To the palate of an unseduced boy alcohol is so repulsive that temperance sermons would be as superfluous as lectures on the folly of drinking reeking coal-oil. The first glass of lager beer is about as attractive as a puddle of fermenting soap-suds. To Lane's Highland girl wine seemed as inferior to must as "blinked" milk to sweet milk.

2. *The instinctive aversion to any kind of poison can be perverted into an unnatural hunger after the same substance.* After the alcoholic fever has once or twice convulsed the organism, the subsequent exhaustion begins to beget a craving after a renewed application of the toxic stimulus. The system has adapted itself to the influence of an abnormal condition and protests against an interruption of that influence. The appetite for wholesome food, however palatable, is never exclusive. A person may become fond of poached eggs and yet accept a piece of bread and butter as a welcome substitute. A predilection for honey, ripe grapes or pancakes will not tempt a man to sell the wardrobe of his children in order to indulge his appetite. Nor is that indulgence followed by an agonizing reaction. A full dose of cream and strawberries does not result in a war dance with the powers of darkness.

3. *All poison habits are progressive.* The development of the alcoholic habit has been ably compared to the growth of a parasitic plant which, sprouting from tiny seeds, fastens upon, preys upon, and at last strangles its victims. The organism becomes blunted against the influence of the stimulant, but the craving for stimulation remains and has to be satisfied with an ever-increasing dose of the same tonic, or else with a stronger poison. At first the neophytes of alcohol toy with danger, but their habit "grows upon them," as our language so significantly expresses it, and unawares they find themselves in the predicament of the insect struggling in the adhesive sweets of a Venus Fly-trap.

And all these systems of Alcoholism apply to every other poison habit. Poisons and stimulants are, in fact, convertible terms. Thousands of years before the dawn of Grecian civilization the Hindoos fuddled with soma-juice, the sap of a species of Stramonia now sometimes used as an asthma-specific. The natives of Kamtchatka have for ages used the common fly-toadstool (*agaricus maculatus*) as a medium of intoxication. Their neighbors, the pastoral Tartars, get drunk on *Koumiss*, or fermented mare's milk; the Asiatic Turks on *hasheesh* (an infusion of hemp seed); the Ashantee on sorghum beer; the Guatemala Indian on *cicuta syrup*, the inspissated juice of a kind of hemlock that first excites and then depresses the vital energies, just as brandy, opium or chloral. According to the "Hungarian Traveller," and Ethnologist Vambery, the Syrian Druses had to organize a temperance crusade against the venders of *fox-glove-tea*. The Spanish American miners use cinnebar and acetate of copper; the Swiss highlanders, arsenic—all, habits equally persistent and pernicious. To the Peruvian mountaineer the loathsome *coca* (maize fermented by means of mastication) becomes as attractive as hock to the Rhineland peasant. And all such poison habits are progressive. An arsenic-eater begins with a fraction of a scruple and increases that quantum to a dose that would kill a bull rhinoceros. A prescription of laudanum is frequently a preparatory school of the opium habit. A fellow whose mysterious ailments puz-

zled the doctors of a Hamburg charity hospital, at last confessed to a weakness for *tan-water*. He was a tanner's apprentice, and in the course of his daily labors had somehow or other contracted a predilection for the caustic fluid, and fared on the whole better than the votaries of more expensive tonics, for he gratified his passion for three years before an inflammation of the fauces entered a protest against a further increase of the dose. If any poison-eater should happen to contract a fondness for phosphorus-matches he would soon have to stuff his pockets with match boxes.

In comparison with the worst forms of alcoholism such pecadillos as the coffee-habit may seem the veriest trifles, but the trouble is that the comparative advantage lessens from day to day. Old habitues drink coffee as a Munich burgher drinks beer, in quantities to supplement the shortcomings of the stimulating quality. A potful of strong black coffee contains nearly the same aggregate of toxic elements as a glassful of brandy. And moreover, coffee and tobacco lead to alcohol. Rather than increase the quantum of his tipple *ad infinitum*, the coffee-drinker is always tempted to graduate to a higher-grade poison: hasheesh in Egypt, opium in Turkey, wine and rum further west. Thousands of topers have entered the beer-garden through a coffee-house. The abyss of the opium-habit has become the grave of thousands who first lost their way in a cloud of tobacco smoke. The beer brewery of the first American Temperance Society probably made more rum-drinkers than their missionaries could unmake. The votary of the stimulant habit, even in its minor forms, commits himself to a stream with an ever-deepening current, constantly tending to carry him off his feet. He may save himself by getting ashore, but can not hope to arrest the progress of the current. We can prevent, but not control, the development of a poison habit. We might as well try to legislate against the ague after permitting the accumulation of festering garbage. A compromise with lesser evils may sometimes seems the best policy, but we may be wholly sure that the fight against Intemperance will remain a hopeless struggle till we deaden the roots of the Upas-tree by total abstinence from all poisons.

The question remains: Is there a physiological necessity for any artificial stimulants whatever? That alcohol and coffee are not brain-foods but only brain-irritants is abundantly proved by the number of eminent thinkers, poets and reformers, as well as philosophers who were total abstainers in an almost ascetic sense of the word; and biologically the question is settled by the fact that the only animals who in a state of nature use anything like a digestive tonic, do not belong to a species of our remotest kinship. Wild cows, deer, sheep and a few other ruminants pay an occasional visit to a salt-lick; but the carnivorous wolf, as well as the frugivorous monkey and the almost omnivorous bear, prefer to digest their food without salt. Our primeval ancestors were probably tropical fruit-eaters with a tendency to deviate to the flesh-food of higher latitudes, but they certainly were not *graminivorous* like the salt-loving ruminants. If then, even the mildest of dietetic tonics is an expletive, rather than essential item of our fare, the belief in the necessity of more violent stimulants is certainly as gratuitous as the Feejee doctrine of salvation by cannibalism.

Statistics prove the melancholy fallacy of the hope that milder stimulants would tend to supersede more baneful poisons. Their comparative harmlessness merely smoothes the road to ruin. Their intrinsic value is always a negative quantity. The philosophy of the Stoics would have preferred to dispense with the aid of tobacco smoke; one can get the *good* of the weed without; and the Caucasian nations had reached the prime of their physical vigor before the Epicureans had ever heard of narcotic beverages.

FELIX L. OSWALD, M. D.

THE STANDARD OF HEALTH.

THERE are, it is said, different *degrees* of health; this fact is obvious. What makes the difference? It is not because this or that organ alone is sounder in one person than another. It is not simply because one person takes so much better care of himself than another, though this makes quite a difference. If we bring together all the causes or reasons we shall find that the secret consists in the fact that the constitution of one is more perfectly and evenly developed—that there is greater harmony and completeness in the performance of the functions of all parts of the body. There must therefore be a *general law* regulating this whole matter of health—some standard, some type of organization better than all others. In other words, it consists in that type or standard where every organ in the human body is perfect in structure and where each performs perfectly its own legitimate functions. In some respects the body may be compared to a complicated machine, so thoroughly and perfectly made that the "wear and tear" will come equally upon every part according to the design in its construction.

Closely connected with and legitimately following this condition of things, we find nature has established

A LAW OF LONGEVITY.

Is there not some standard or model laid down by physiology that shows why in certain cases life should be protracted to a great age? It does not depend upon food, climate, locality, race or care, though all these may have much to do with it. Is there not an *internal factor* more important than all these? One of the great secrets, we believe, not only of good health but of long life, consists in the harmony or balance of organization. This must apply both to structure and function. The leading vital organs should be not only sound but well-balanced. The principal forces in carrying on the functions of life may be summed up under these heads: Respiration, digestion, circulation, assimilation and secretion. Each of these departments must be well sustained in order to secure long life.

But, aside from any theory or opinion or argument, what are the actual facts—what do we find in the organization of those persons who have reached a very great age? No tables of statistics can be given from post-mortem examinations of such cases, because attention has not been turned in this direction. But, from the physical description of a great number of very aged persons, and from careful observation also of a very large number we have always found that a most striking harmony or balance of the physical system prevailed. In great longevity there is uniformly found remarkable consistency or evenness in the mental, moral and social elements of character. These traits originate from a sound and well-developed brain. This organ plays a very important part in securing longevity.

There is another argument in favor of this law of longevity—that the extremes in physical or mental development seldom reach a very great age. It should be borne in mind that the law of longevity here advocated constitutes the golden mean or balance-wheel between these extremes. For instance, the defective classes such as the insane, the idiotic, the deaf and dumb, the blind, etc., are not as a body, long-lived. Neither are dwarfs or giants, nor persons approximating such organizations very long-lived.

There is another very important factor in longevity — that is, *inheritance*. Scarcely any truth on this subject is more firmly established than that the ancestry, the family or stock has much to do with long life. Seldom, if ever, do we find a person reaching a great age without some one or more persons in the

ancestry have reached a great age. What then, is the peculiarity or type of organization here perpetuated? What are its elements that make life so long? Do we not find that they consist in a sound, healthy structure of every part of the body, and that there is a remarkable balance in all the organs and a harmony of functions? So universally is this essential element found in persons long-lived that we question whether a single exception to the rule can be found. This leads to another application of this normal standard of physiology, that upon it is based the

LAW OF HEREDITY.

For centuries there has been more or less interest on this topic. A large mass of facts have been gathered upon the subject and physiologists now generally admit that there must be truth in this matter of inheritance. Within a few years the interest has greatly increased. In the case of domestic animals the principle has been reduced almost to a science. With some changes or modifications, the same principle which has been so successfully applied to the animal creation will apply to human beings. But before there can be great advances on the subject, we must understand heredity better —we must have some general law or principle to guide us. What we need more than anything else, is a general principle or law by means of which all the facts or knowledge of this kind can be classified and reduced to some system. It is impossible to make any great advances or improvement upon the subject of heredity without such a guiding principle or standard of appeal. In the facts or phenomena of nature there must be some general law or principle to guide us in understanding them and improving upon them. All science makes progress only in this way.

While there may be different factors, and secondary causes in producing many of these hereditary phenomena, if the primary cause or starting point could be ferreted out, we might find it to extend back several generations. All the general principles of science when traced back to their origin are based upon nature in its best condition. And the nearer we can go back to a perfect physical organization the less peculiarity, eccentricity or defect shall we find. It may be we can not explain or understand all the causes of the strange or different phenomena of character; it does not disprove but there may exist a general law somewhere. It is true there have been different theories and speculations in accounting for hereditary influences, but we do not believe that they can all be explained so satisfactorily upon any other law or hypothesis as upon the one here stated—that is, upon a perfect development of anatomy and physiology, or in other words, that all the organs in the human body shall be so constructed that there must be legitimately a healthy performance of all their functions.

There is another important test in favor of this normal type of physiology—as far as the human body is concerned, it presents the true *standard of beauty*. Man was created with a sense of taste and love for the beautiful, which cultivated and perfected, might find objects in nature capable of gratifying this taste to its fullest extent. Now there must be a type or model for man, which in form, proportion, size, fullness, outline is more beautiful than all others. Is not this the same standard that Grecian and Roman artists have attempted to imitate in statuary? Has it not in all ages and with all nations attracted attention? Why should it not constitute the basis or foundation for most valuable laws? But the most important law of all involved in this physiological description remains to be stated, that is

THE LAW OF HUMAN INCREASE.

This law virtually controls all others. With a change here the conditions of health, of longevity and of heredity would necessarily be more or less affect-

ed. It is in fact the starting-point, the groundwork of the most important inquiries that can be raised connected with physiology. All that we can here do is to state what this law is, what some of the evidences in support of it are, and what are some of its applications. It would require volumes to do justice to the whole subject.

In the first place there is no universal law of population that is generally admitted as such, and referred to as authority. Nearly one hundred years ago Malthus established what he supposed a general principle to regulate population, and his theory prevailed for fifty years or more. It is discarded now by all physiologists as well as most writers on political economy. It is rare to find now any prominent writer advocating the doctrines of Malthus. The theories of Herbert Spencer on this subject have probably at the present day more influence than those of any other writer. The views of Spencer, unlike those of Malthus, are based upon physical organization, but are not so strictly physiological as the law here proposed. The foundation, the ground-work of the law we advocate, is based solely upon anatomy and physiology in their best estate. There are other factors, such as food, climate exercise and other external agents, but these are secondary.

That this law may be distinctly understood, we will describe, as briefly as possible, what is meant by it. It is based upon a normal or perfect physical standard of the human system, where every organ of the body is complete in structure and performs fully all its natural functions. This principle implies that the body is symmetrical, well developed in all its parts, so that each organ acts in harmony with all the others. According to this principle the nearer the organism approaches that standard, and the laws of propagation are observed, the greater will be the number of children, and the better will be their organization for securing the great objects of life.

On the other hand, if the organization is carried to an extreme development in either direction, viz,, a predominance of nerve tissue, or of a low animal nature, the tendency in such families or races is gradually to decrease and ultimately to become extinct. Thus people enjoying the very highest civilization, or living in the lowest savage state, do not multiply rapidly. It is well known that the families in Europe belonging to the nobility or aristocracy, whose nerve tissue has become predominant by inter-marriage from generation to generation, do not increase much, and not unfrequently these families become extinct. A similar result has also followed the inter-marriage of relatives from the fact that the same weaknesses or predispositions to diseases are intensified by this alliance. On the other hand, in case these relatives have healthy, well-balanced organizations—it may be they are cousins—they will abound with healthy offspring, and the stock may improve, and not deteriorate, from the mere fact of relationship. It explains a principle that has long been employed in the improvement of domestic stock under the terms, "breeding in-and-in," and "cross-breeding."

NATHAN ALLEN.

FRUIT IN OUR DAILY DIET.—One of the most salutary tendencies of the common domestic management in our day is that which aims at assigning to fruit a favored place in our ordinary diet. The nutrient value of such food, in virtue of its component starchy and saccharine materials, is generally admitted; and while these substances can not be said to equal in accumulative force the more solid ingredients of meat and animal fat, they are similarly useful in their own degree, and have, moreover, the advantage of greater digestibility. Their conversion within the tissues is also attended with less friction and pressure on the constructive machinery. Almost all persons in fairly

normal health may partake of sound and ripe fruit in greater or less amount. Except in certain cases, indeed, there is practically no exact limit to its consumption under these circumstances. Among such exceptions may be noted the gouty and rheumatic habits of body. A tendency to diarrhœa or a dysenteric history obviously forbids the free or frequent use of fruit. Dyspeptic stomachs, on the other hand, are usually benefited by a moderate allowance of this light and stimulating fare. It must be remembered, moreover, that every fruit is not equally wholesome, let the digestion be as powerful as it may. Nuts, for example, consisting as they do, for the most part, of condensed albuminoid and fatty matters, can not compare in acceptance, either by the palate or the stomach, with other more succulent kinds, even though they contain in the same bulk a far greater amount of nutriment. A little of such fruit is enough for digestion, and that little is best cooked. Nevertheless, if we take fruit as a whole, ripe and sound of course, and consider its variety, its lightness, aud nourishing properties, whether eaten alone or with other food, and its cheap abundance, we can not hesitate to add our voice in support of its just claims on public attention.

The above is taken from that received medical authority, the London *Lancet*.

THE VALUE OF OLD SHOES.

TO-DAY I have been doing a rare and novel job, among fruit trees and grape vines. For a year past, one corner of the garden has been appropriated as a little dumping nook, where all the valuable rubbish that accumulates on the premises is stowed up neatly for manurial purposes, to enrich the soil about fruit trees, berry bushes and vines. Some little boys in the neighborhood, are accustomed to pick up every fragment of bone they can find, and sell them to rag-pickers, for only five cents per pailful; I offered them ten cents per pailful. During the year I purchased three barrels of good bones. To-day, I have been burying them in this way. I dig a trench around a pear tree or vine, about twelve inches deep, and a foot wide, and two, three, or more feet distant from the body of the tree; after which about half a bushel of bones is scattered in the bottom of the channel. Then, old shoes that will never be worn again; old newspapers, old rags, bits of old carpets, old band boxes, old books, large bundles of circulars which have been sent us, unsolicited, old rubber over-shoes, fragments of worn-out oil cloth, old hen's feathers that have been accumulating for a long time, but have not been used, old scraps of iron, old stove-pipes, the hair in old mattresses that is considered of no value, heads and feet of fowls, and every thing in the line of rubbish is kept in barrels, and then buried where all such trash will play an important part by way of renovating the soil near fruit trees, and thus render them material aid, by way of developing more healthy trees and finer fruit. The roots of growing trees will soon find all such rubbish and use it up. Even the hardest bones will soon disappear after the roots have laid hold of them.

It has been stated that Roger Williams, the eminent founder of Rhode Island, was eaten up by the roots of an apple tree, that grew near his grave. One root struck down to his coffin, commenced at the head and devoured the body and then branched off where the legs were quietly reposing, and consumed not only the dust but every little bone, The root of the tree, representing a man's body and legs, was dug up with care, and was preserved in the archives of the Historical Society. No doubt the body of that great man (or some of it at

least) aided in developing fine apples. It has ofter been asked: "Who ate the body of Roger Williams."

Most people collect all such rubbish as has been alluded to, and cart it away to some dumping ground, or burn it. Hair, feathers, wool, horn-shavings, hoofs of animals, and bones will make the best kind of material to enrich the soil around fruit trees and berry bushes. Hair and feathers are worth as much, pound for pound, as the best quality of bone dust. Dealers in rags will pay half a cent per pound for old woolen rags, which are actually worth two cents per pound to enrich the soil around fruit trees. Old paper is frequently sold for one fourth of a cent per pound, when it is really worth not less then one cent per pound as a fertilizer, especially on thin, sandy land, where carbon is needed. Paper is nearly all carbon. We never sell any such rubbish, nor is it burned up. If buried where the roots of fruit trees can reach garbage of any kind, which is often cast into the street to feed worthless curs every atom will eventually be licked up, to promote the growth of healthy branches and delicious fruit.

SERENO EDWARDS TODD.

WELL MATCHED.

ONE of our medical exchanges publishes the following:

Experience, judgment, theory, faith, chance and patience sometimes have strange encounters and excite a strange admixture of feelings, including wonder, mirth, humiliation, exultation, doubt, confidence, and the want of it, in the parties concerned and those who listen.

John Farnam, his wife and Dr. Lang were very substantial people—book wise, worldly wise, well-to-do and level-headed. John managed his affairs well, and his wife in her domain was like him. Each had their peculiarities, and neither allowed them to clash. Dr. Lang was sound in his profession and was a welcome friend as well as the family physician. Mrs. Farnam had an irreconcilable objection to the use of mercurial preparations in any form as medicine, and would not use them or allow their use for herself or her children. John took what the Doctor gave him and let his wife have her way.

The youngest child, a boy of fourteen, was attacked with dysentery and rapidly ran into danger with it. Dr. Lang desired to use mercury as an alterative in his treatment, but Mrs. Farnam said no. The boy got worse. The Doctor tried hard to reason down her objections, but in vain; then he went to John, and told him the boy would die unless he was allowed to treat him according to his own judgment and experience. John said he could not help it; he must settle it with his wife. The Doctor did his best to convince Mrs. Farnam that her views were erroneous and her objections were only prejudice, and would cost her son his life. She did not falter in her own judgment. To save the boy, the Doctor thought deception justifiable, so he said he would do the best he could and be responsible. Then he made his prescriptions and left them with instructions, visited the boy often and watched him with great care, while Mrs. Farnam nursed him. By a hair he turned the corner and began to mend. When he became convalescent and was able to be propped up in bed and eat something, Dr. Lang felt that he must unload his conscience for his deception and prove to Mrs. Farnam how unreasoning her objections were to the use of mercury in every form, and show that it was the sheet-anchor in some cases of disease. So he congratulated her on the recovery of her son, told her he had been giving him calomel and mercurialized chalk, and so had saved his life; and but for that he would have died; that he was justified

in his deception by the results, and trusted that she would overlook it and lay aside her unjust prejudice.

"So you have secretly been giving him mercury, have you Doctor?"

"Yes, madam. It is the only thing that saved him."

"And knowing how I felt about it, you have been using my hands to do what I would not knowingly let them do, by deceiving me?"

"Yes, madam. You compelled me to do it, for I felt that you had no right to put your unjust prejudice against the boy's life."

"And so I would have killed him, and you saved him to me with the deception and the mercury?"

"Exactly, Mrs. Farnam. That is all of it."

"You feel certain about that? You can't be mistaken?"

"I know it, Mrs. Farnam. He grew rapidly worse until I decided to give him the treatment my judgment dictated, and from that time he changed for the better. Of course I know."

Mrs. Farnam walked to the mantel, and lifted up an ancient vase that stood there as an ornament. She swept off some parcels into her hands, walked to Dr. Lang, and told him to hold out his hands; and she emptied the contents of her own into his, saying: "There, Doctor, is every prescription you made, and every powder you left for my boy. I suspected you, and I never gave a dose you left. I took his life into my hands, determined he should not be killed, but if he died, he should die a natural death. With such remedies as I knew could not harm, and I believed would benefit, and with careful nursing, my boy comes back to me from the shadows. I respect your judgment, I thank you for your earnestness and zeal, and am sorry to mortify you. But I have confidence in my own judgment also. I am sorry you tried to deceive me. I dislike to be suspicious; but in this case it has all worked together for good, and in a measure we have both had our way. "All's well that ends well."

C. H. REEVE.

HINTS FOR CONDUCT.

FIFTY years ago there was a well known publication called "The Good Manners Book." It contained instructions in regard to going to and returning from church, on table etiquette, etc. On each page was a picture representing the fault mentioned in a couplet beneath. The following are a few specimen couplets that are appropriate for advice in some domestic circles to day.

Writhe not your limbs in every shape
Of awkward gesture like an ape,

Twirl not your toes, nor lolling stand,
Nor in your pockets place your hand.

All whispering, giggling, winking, shun
Turn not your back on any one.

When you blow your nose be brief.
And neatly use a handkerchief.

Do not allow yourselves to look
In letters, papers, or a book,
(Till you have leave.)

Set not your knife and fork up straight.
Gaze not upon another's plate.

Dip not a dirty knife in salt,
But carefully avoid the fault,
Of blowing while at meals your nose,
Unless necessity impose,
When drinking do not stare around,
Nor make a harsh or gurgling sound.

Turn not your meat nor view it close;
Nor ever hold it to your nose.

Stuff not your mouth, nor blow your meat,
Wait till it's cool enough to eat.

If in your food should chance to be
What can't be eat conveniently,
Remove it from your mouth with care
Lean not upon an other's chair.

Use not a toothpick to be seen,
But hold a napkin for a screen.

WRITER'S CRAMP.

THE name "writer's cramp," would seem to imply a local affliction, but an affection of this character is seldom, if ever, wholly due to local conditions.

The primary cause of the complaint lies back of it, and in this respect the mechanism of nature is unlike the mechanism of man. In man, beyond the mechanical adaptation, one part has no relation to the other. In a machine of ten parts if one be imperfect in the running, it will have more or less ill effect on the other parts; but the machine may be stopped, the imperfect part replaced with a perfect one, and all will then work smoothly. But in nature there can be no such local treatment of a member. Local treatment, in whole or in part, must be resorted to in cases where the affection is local, like an injury from some external source; but where the affection is the result of general debility, the whole system must be put in order before it can have any great power to repair a member or part. Nature has the power to repair, but that power is general and not special, and works from the centre outward and not in an independent manner on a part or member. There may be an apparent exception to this where a medicine is supposed to have some independent or special local effect, but then the local effect is secondary; the primary effect is to "tone-up the general system." This done the local repair is included in the general improvement.

In the "writer's cramp," the general system is more or less out of order, so the first effort should be to restore that. Yet it may be that the system is in fair condition, and that too much strain has come to one set of muscles, or the action or freedom of these muscles or parts may be interfered with by the dress. Such being the case there is need for a change of position, the exercise of a different set of muscles, or relief in the dress.

Where the system is debilitated, the blood is impoverished and the circulation impaired and enfeebled. People are at times crippled in some member and are thereby forced, by the exercise of their will power, to do tasks in an indirect and unnatural manner. They who are enfeebled by disease, and yet have to continue at their work, have often to resort to ingenious expedients to favor the weaker part. Those who are obliged to write and are subject to the "writer's cramp" would do well to attend first, to the building-up of the general system; but as subordinate relief they may desire to do that which will favor their weakened condition.

Up-hill circulation is not difficult for the vigorous and strong; but persons of enfeebled circulation must guard against enforcing an extra and impossible duty on a weakened system. They need to help the circulation of the blood in the hand rather than to do that which may obstruct it. For this purpose the position at the desk or table should be elevated, say by sitting in a high chair, or standing at a desk, in such a manner that the hand will be a little above the plane of the writing material and not below it. But in order to do this, the person, if sitting, must have something to support the feet; it will not do to let them be without a proper rest.

The position assumed for the purpose of favoring one member must not be detrimental to another. What is needed is a relatively low table, *i.e.*, the arm of the writer should be above the surface of the table. If the table is already quite high and if the chair is high, there must be a stool for the feet to rest upon.

I think where persons are troubled with or liable to the "writer's cramp," they will find relief by this relative elevation above their work; that the elevated position will favor rather than obstruct the circulation, and that this is one important point to gain. But this, although a relief, is only a local treat-

ment. What is needed most is general treatment whereby the whole system may be put in order and the condition of health restored. The general health good, it will not be difficult to maintain the parts in good and vigorous condition. J. P. N.

EYE-GLASSES AND CATARRH. — We have our national game of base ball—more's the pity—are we also coming to have our national disease? One might well believe it in seeing how all our papers are filled with advertisements of catarrh remedies. Has any one thought what may be *one* cause of this very common disease? Has it not increased wonderfully since the almost universal wearing of eye-glasses to which so many of quite young children in our schools are coming. Can anything be placed so tightly upon the nose as to be a fixture without positive injury to the delicate breathing apparatus within it?

Then too, no one wearing them can carry the head in an easy, natural position, but with spine so erect as to resemble oriental water-carriers. And though I have read eulogiums on the beauty of their erect figures and stately gait, I incline to think our Creator intended us to occasionally rest the spine by unbending a little. I have noticed so many after wearing, for a while eye-glasses beginning to complain of the head, of catarrh symptoms, throat difficulties, that my mind is quite settled upon this one serious cause thereof, and if eye-glasses were not a little more genteel, do not make one appear so old as spectacles, a return to those good old-fashioned helpers of defective eyes would, I believe, cure catarrh much sooner than the inhalers and nostrums whose name is legion.

Surely these eye-glasses are a nuisance in other respects. Attach them to your dress, put them on, and with a sudden change of position, where are they? Fail to attach them and you will be sure to ask in despair, when wanting them in a hurry, "where *are* they?" Now, spectacles with the small, flexible bows that hook over the ear, keeping them from slipping off as they rest loosely over the nose, are so much better in every respect, that I long to see them adopted by all classes, not only for the benefit to the poor spines, but for, as I believe, the doing away with these disgusting advertisements and the still more disgusting disease they claim to cure.

A pretty young lady may not look so piquant and fascinating in her spectacles, but how much easier her gait, how much sweeter her breath, how much more wholesome her whole make-up! And the "dudes," Oh! is it expected they *can* come to this change when they are so killing in eye-glasses? H. N. S.

A LITTLE "PATHIC" SPAT.

Little drops of water,
Little grains of milk,
Make a little doctor
Of the homœopathic ilk.

N Y. *Medical Record*,

Learned talk of microbes,
Guess work o'er the sick,
Mark the allopathic
Doctor of physic.
If he's liberal-minded
He—as one would say
Suffering from coryza—
Finds it a "Code" day.

N. E. *Medical Gazette.*

STORE MINCE-PIES.—Here are a few of the materials in a sample of modern minced-meat, such as is found in many of the cheap pies that are supplied to the grocery and the small restaurant by pie companies: sulphurous acid, lime, vinegar (these comprising the preservation mixture, wine, brandy, and cider being too expensive) apples, neither peeled nor cored, those with white skins being used, as the red would betray themselves. To pare the apples is an operation entailing expense, and is, in the eye of the thrifty manufacturer, a waste. So the fruit is thrown into the chopper; and skins, cores, and rot swell the bulk, and add their quota to the indigestibility of the compound.

NOTES IN SCIENCE AND INDUSTRY.

California Volcanoes.—The phenomena of volcanoes and of lava flows are exhibited on a grand scale within the limits of the United States. In the Cascade mountains, stretching southward from British Columbia through Washington territory and Oregon into California, we find a succession of magnificent volcanic cones capped with snow, now cold and silent, but giving evidence of fiery activity in comparitive recent geological time. Some of these mountains are said to even yet emit steam and sulphurous fumes. To this line of extinct volcanic vents the peak of Shasta, the Marysville Buttes, and the many lava fields of the Sierra Nevada of California may be said to belong. It is, in fact, one great line of volcanicity from Lower California northward, and is a part only of the great circle of volcanic vents which may be traced on a globe through the two Americas and Asia, bordering the Pacific ocean. The extinct condition of many of these volcanoes within our borders may, however be more apparent than real. While lying dormant within the short period to which human observations extends, they may at any time break forth anew. There are, however but few evidences of comparatively recent eruptions, most of the lava flows being ancient and before the human period, There is, however, one exception. At a date as recent as 1850 an eruption of ashes and lava was reported to have occurred in the northern part of California, at Feather lake, in Plumas county. It was noted at the time, or soon after, by both Dr. Trask and Dr. Harkness, in communications to the California Academy of Sciences, in which the outflow of lava and its effects were described, Capt. Dutton, of the geological survey has recently visited the scene of this eruption, and describes it in a late number of *Science*. He finds the vent now covered by a large cinder cone about six hundred feet high, rising just above the western shore of the lake. The lake basin was about four or five miles long before the eruption, but the lava stream which flowed from the cone has nearly filled it up. This lava is hard and basaltic, and is over one hundred feet in thickness. The stream of lava is about three miles and a quarter in length and a mile in width. The cone is partly surrounded by this lava, but is perfect in form,a crater at the top. Built up of scoria and volcanic ashes, the outer layers being like coarse sand. Great quantities of fine lapilli are spread out over the adjoining country to a distance of two miles. The cone is not weatherworn, and is without vegetation except a bush of ceanothus. The trees for a distance of four or five hundred yards from the cone were all killed, and charred and decaying trunks are still lying upon the ground, Capt. Dutton thinks that the date of 1850, which has been assigned to this eruption, is correct, and that it is probably the latest volcanic eruption which has taken place in the United States.

The Devil's Footprints.—On the farm of John Mix, on the Cheshire road, two and a half miles from Waterbury, there is a rock bearing the impression of a human foot. As a curiosity this in itself may not be remarkable, but with it is connected a legend which is interesting as showing the credulity of early New England ideas. Mr. Mix tells the story as it was handed down to him by his ancestors, who have occupied the farm from the time of the first settlers. It is that there once dwelt there-about a devil; that went about on one foot and one hand in a hell or lake of fire and brimstone, and by stepping on rocks heated to softness left this impression. The imprint is known to this day as the "Devil's Foot." The case is closely analogous with one mentioned by Dr. D. N. Prince in his autobiography published in 1873. He states that in Ipswich, Mass, "there was a ledge of rocks in front of the Methodist Church on which there were some curious figures or indentations, among them a print of a human foot, very perfect. And there was a tradition among the schoolboys that at some past time the devil, to show his activity, hopped over the weather vane on the church steeple and came down with such force as to sink his foot into the solid rock and leave its print as it then appeared. A short distance from this was another somewhat irregular print, which was said to be the "cloven foot."

CONNECTICUT PAPER.

We trow that the marks in the stone do resemble a human foot while a rather superstitious imagination has supplied the legend.

Seasonable Hints on Fruits.—Fruit trees which have been recently transplanted will be greatly assisted by mulching over their roots, and for this purpose there is nothing better than partially-rotted stable manure. It is better to apply this mulching now than earlier, as, when applied at planting time, it has the effect of keeping the ground cool when it should be rather exposed to the warming influence of the sun, which encourages the growth of roots, but as the season advances, the covering will have a tendency of retaining moisture in so far that it prevents, or at least modifies, surface evaporation. If the trees were not cut back sufficiently at the time of planting and are now producing weak growths they may be cut back, which will cause them to make a better growth.

It is a well-established fact that pruning weakens trees, but when a tree is moved its roots are much abridged, and it is found that it will fare better when the branches are also shortened, which helps to restore the balance between the roots and the top.

The peach trees, so far as we have been able to observe, have set a very heavy crop of fruit. Much of this will drop before the stoning process has passed, but where the finest fruit is desired some of the smallest fruits may be removed. This can only be done well by hand and is a tedious business, but those who have practiced it find it a profitable operation, as it adds to the value of the fruit far above the cost of thinning the crop, and where but a few trees are grown for family use the result from thinning will be very satisfactory.

The Oldest Newspaper.—The oldest newspaper in the world is the *King-pau*, or "Capital Sheet," published in Pekin, and since the 4th of last June issued in a new form prescribed by special edict of the reigning Emperor, Quang-Soo. It first appeared A. D. 911, but came out at irregular intervals. Since the year 1351, however, it has been published weekly and of uniform size. Until its reorganization by imperial degree it contained nothing but orders in council and court news, was published about midday and cost 2 kash, or something less than 1 cent. Now, however, it appears in three editions daily. The first issued early in the morning, and printed on yellow paper, is called *Hsing Pau King Pau* (Business sheet), and contains trade prices, exchange quotations and all manner of commercial intelligence. Its circulation is a little over 8,000. The second edition which comes out during the forenoon, also printed on yellow paper, is devoted to official announcements, fashionable intelligence and general news. Besides its ancient title of *King Pau*, it owns another designation, that of *Shuen Pau*, or "Official Sheet." The third edition appears late in the afternoon, is printed on red paper, and bears the name of *Titani Pau* (Country Sheet). It consists of extracts from the earlier editions, and is largely subscribed for in the provinces. All three issues of the paper are edited by six members of the Han-Lin Academy of sciences, appointed and salaried by the Chinese government. The total number of copies printed daily varies between 13,000 and 14,000.

Meteorology of the Congo.—Mr. A. von Danckelmann, a German meteorologist, has been making observations at Vivi, in the country of the Congo, and reports some curious results. During about a year that he stayed there the barometrical column did not vary more than ten millimetres; even the passage of tornadoes seemed to produce no greater effect upon it. The year is divided into rainy and dry seasons. During the latter, from May to October, no rain falls, but the earth is occasionally moistened by the depositions from fogs. From November to April heavy showers of short duration prevail, and the water falls, in portions, sometimes as high as one hundred and two millimetres—about four inches—in two hours. Long, fine rains are unknown. The country is visited by cyclones, but, while storms passing to the north of the station turned the vane in a contrary direction to that of the hands of a watch, those passing it to the south turned it in a direction corresponding with theirs. The natives burn the tall prairie-grass in the dry seasons, causing fires that last for a long time, and produce considerable meteorological effects. The air is constantly loaded with smoke, while cumulus clouds are formed over the fires and emit lighting with thunder. One of the most remarkable meteorological phenomena of the region is the existence of a southwest wind, which, beginning at sunset, blows all night till sunrise with such force as to raise large and dangerous waves on the river.

Wages in 1800.—In McMaster's History we are told workmen were paid at the beginning of this century: On the Pennsylvania canals the diggers ate the coarsest diet, were housed in the rudest sheds, and paid $6 a month from May to November, and $5 a month from November to May. Hod carriers and mortar mixers, diggers and choppers, who, from 1793 to 1800, labored on the public buildings and cut the streets and avenues of Washington City, received $70 a year, or, if they wished, $60 for all the work they could perform from March 1 to December 20. The hours of work were invariably from sunrise to sunset. Wages at Albany and New York were three shillings, or, as money went, forty cents per day; at Lancaster $8 to $10 a month; elsewhere in Pennsylvania workmen were content with $6 in summer and $5 in winter, At Baltimore men were glad to be hired at eighteen pence a day. None, by the month, asked more than $6. At Fredericksburg the price of labor was about $5 to $7. In Virginia white men, employed by the year, were given $16 currency; slaves, when hired, were clothed, and their masters paid $1 a month, A pound of Virginia money was, in Federal money, $3.33. The average rate of wages the land over was, therefore, $65 a year, with food and perhaps lodging. Out of this small sum the workman must, with his wife's help, maintain his family. But then the cost of living was vastly less, and the habits of people generally infinitely cheaper. There were no art or bric-a-brac crazes.

Another Great Tower for Paris.—Besides the gigantic tower that M. Eiffel proposes to erect for the Paris Exhibition of 1889, the center of civilization is to have another great tower, which is to be used for scientific purposes. M. J. Bourdais has presented to the French Society of Civil Engineers a project for the erection of a masonary tower 984 feet in height. After an examination of the different geometric profiles realizable, M Bourdais has adopted the column as being more apt than any other form to satisfy the rules of æsthetics, and also as being the most stable. In fact, the highest chimney in the world—that of St Rollox, near Glasgow, 433 feet in height—has been subjected to numerous storms without suffering from them, and as other chimneys exposed to great wind pressure have never given rise to any accident, it would seem that a cylindrical form is one that should be adopted. M. Bourdais's structure would consist of a base 216 feet high, in which is to be established a permanent museum of electricity. Above this would rise a six-storied column, surmounted by a roof, forming a promenade and capable of accommodating 2,000 persons. The central granite core, 60 feet in diameter, would be surrounded with an ornamental framework of iron faced with copper. This would be divided in six stories, each containing sixteen rooms, 16 feet in height and 20 feet square, designed for ærotherapic treatment.

Commercial Relics of Ancient Rome.—An interesting discovery illustrating the commerce and the luxury of ancient Rome has been made close to Monte Testaccio and the English cemetery. The whole of that district to the west of the Aventine, outside the Porta Tregemina was occupied by granaries and warehouses for the storage of imports of all kinds. Between the northern side of Monte Testaccio and the Tiber there still exists colossal remains of the great emporium built by Marcus Emilius Lepidus and Emilius Paulus nearly 200 years, before the Christian era. In the year 1868 a considerable portion of the quays was discovered, together with some 600 blocks, many of them of large size, of rare, variegated marbles of all kinds, lying just where they were landed from the galleys which had brought them from Numidia, the Grecian, the Islands, and Asia Minor, fifteen centuries ago. Now, in the course of the building operations in this locality, two warehouses have been discovered, one filled with elephant's tusks and the other with lentils. It is curious to find such products side by side; but as bags of lentils were sometimes shipped as ballast, they may have served that purpose. The discovery would have been a very valuable one if, unfortunately, the ivory had not been much decayed.

Old Libraries in the U. S.—The Three oldest consulting libraries in the United States are those of Harvard, Yale, and the New York Society. Harvard College began its career with a library which was a part of the bequest from John Harvard, but in 1764 a fire totally destroyed its

accumulations of 126 years. Yale College began its collections in 1700, and was aided thirty-three years later by the bequest of 1,000 volumes from Bishop Berkeley; yet in 1764 it amounted to only 4,000 volumes. The New York Society's library, now containing 80,000 volumes, was founded in 1700, but did not take this name until 1724. The fourth oldest library is that in Philadelphia, founded by Benjamin Franklin and his friends in 1871. This library has now over 130,000 volumes, and in some respects is unsurpassed by any other collection of books in the country. Its income is about $26,000 a year, of which a third only is available for the purchase of new books, yet it attempts with much success, to do the same kind of public service that is accomplished by the Boston Public Library, whose income is $125,000.

A New Explosive.—A new explosive, known as Hellhoffite, which has been invented by Hellhoff and Gruson, has been subjected to trial at St. Petersburg, in competition with nitro-glycerine and ordinary gunpowder. It is described as a solution of a nitrated combination— naphtholine, phenol, benzine, etc.—in fuming nitric acid. In preparing the Hellhoffite tried in the experiments, binitro-benzine, a solid, inexplosive and badly burning body, was used. The trials showed that Hellhoffite possesses the following advantage : 1. In igniting it with fulminate of mercury it acts more powerfully than nitro-glycerine. 2. It may be stored and transported with perfect safety as regards concussion, as it can not be exploded either by a blow or a shock, or by an open flame. On the other hand, it has the following disadvantages: 1. Hellhoffite is a liquid; 2. The fuming nitric acid contained in Hellhoffite is of such a volatile nature that it can be stored only in perfectly closed vessels : 3. Hellhoffite is rendered completely inexplosive by being mixed with water, and can consequently not be employed for works under water.

A Mexican Obstacle.—One of the greatest drawbacks to Mexican prosperity is the difficulty of breaking up the great haciendas, or landed estates. Out of 10,000 000 people, 50,000 own the soil, and this fact is a great obstacle to the introduction of settlers and the springing up of those communities which in the United States flourish along every land-grant railroad and other railroads. The difficulty of covering real estate is a dead weight on the life and progress of the country. The *Mexican Financier*, which is doing good missionary work, contrasts with this state of things the condition of Uruguay, which by encouraging immigration and settlement upon lands has nearly doubled its population within ten years, having received large accessions from Italy. Uruguay annually produces 40 per cent. more per inhabitant than any other country in South America, and enjoys peace and progress. There is no fertilizer so powerful as an enlightened, free and progressive government.

A Valuable Invention Dreamed.—The Hon. S. S. Cox, in an address on the occasion of the Morse Memorial Exercises, said: "Jacquard, the inventor of the loom—the poet of matter—awoke one morning with a machine out of his dream. Levers, pulleys, springs and wheels made music to him in his sleep. He had another dream — this Jacquard. He made by his genius a portrait or landscape on a shawl or ribbon; but his other and costly dream was a machine to make nets." Mr. Cox called it a costly dream, because the inventor of a way to tie knots in stretched strings was arrested and carried before Napoleon, a proceeding that caused him much annoyance, but was advantageous.

Vaccination for Cholera a Failure.—*M. M. Paul Gibier* and Van Ermengen have communicated to the Paris Academie des Sciences the results of their experments on Dr. Ferran's methods of vaccination. These biologists were appointed by their respective Governments, and they have independently arrived at the same conclusion —that by the subcutaneous injection of the cultivated virus (*Comma bacillus*) it does not preserve the animals on which their experiments have been made from the attacks of cholera.

Lake Glazier.—The newly discovered source of the Mississippi is a sparkling, little lake, which nestles among the pines of a wild and unfrequented region of Minnesota, just on the dividing ridge which forms the great watershed of North America. It is about a mile and a half in greatest diameter. The waters of the lake are exceedingly pure, coming from springs.

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AN ENGLISH PHYSIOLOGIST ON TEMPERAMENT.

IN PROFESSOR JONATHAN HUTCHINSON'S late volume of lectures entitled "The Pedigree of Disease," some space is devoted to the discussion of *temperament* and its importance as an impression of physical condition. Temperament we are told, is essentially related to health, is *physiogical* not *pathological*, and therefore a classification like Dr. Laycock's "the last and certainly by far the best attempt at classification," quoting from Hutchinson contains terms indicating the presence of the morbid element. This classification reiterates old terms like bilious, lymphatic, melancholic, which are very justly characterized as more related to disease than to health, and having on that side a rather mixed identity. With the shrewd intelligence of study and observation that has limitations, we feel compelled to say, our author is disposed to regard as untrustworthy the data of temperament, because in his belief we have "but little to guide us in a classification accepting the conditions which go to make up what we mean by complexion," yet he can not doubt the several "fundamental modes of vital activity" that constitute and differentiate temperament. We are not surprised at the position of Professor Hutchinson with regard to such data as are indicated; but we are much surprised that a physiological teacher in a leading English medical school should not have found a better classification, or at least have endeavored to harmonize his invention by formulating a series that would better correspond to the "fundamental modes of vital activity." We are surprised, too, that he did not more thoroughly investigate the literature of the subject, whereas he seems to have relied mainly on old authors, or their later representatives. No where has temperament been more discussed than in Phrenological literature. English and American writers of this type giving their attention to it as a subject of first importance in organization. Spurzheim and Combe taking the old classification made some change in its terms and adapted it to use as best they could, but we think that it is evident they clearly enough discerned the incompetence of its definitions. The American writers, however, early expressed dissatisfaction with such a method of determining physical state, or "vital activity," and pronounced such terms as nervous, bilious, lymphatic as unsuitable and rather indicative of morbid tendencies or diatheses, than a condition of vital integrity. Hence arose the classification which for upward of thirty years has been followed almost entirely by practical phrenologists on this side of the ocean and by many on the other side—the triple classification of Motive, Vital and Mental. The difficulty of applying

the old classification to the dark-skinned and Asiatic races, a difficulty that naturally led the scientific observer to regard it with suspicion, is surmounted by the later, and as far as its being thoroughly *physiological* as a system of terminology we think that the new series must commend itself to the severest critic.

In discussing race and family qualities, Professor Hutchinson thinks that temperament should rank as an important factor, but with such views of it as he has obtained from Laycock he feels himself in a position of uncertainty where everything should be clear and definite, and therefore is compelled to make his observations without its aid. That some kind friend may persuade him to look a little further, perhaps in a direction that prejudice or ignorance has veiled from his eyes, is our hope ere he settles into the sad and unnecessary conviction that temperament is a *something* that nobody can find out.

THE HYGIENE OF POCKETS.

It is common now-a-days for trousers to be made with a pocket placed a little below the band in the back part of the garment. It is commonly termed the hip or pistol pocket. We suppose that its original designer had the convenience of those "gentlemen" in view who as a habit carry loaded revolvers, for in the slight hollow of the hip where the pocket is, an ordinary six-shooter will fit and make no suspicious show. But the pistol pocket has grown into favor for other and more *benign* purposes than carrying a deadly weapon. Friends tell us it is a very safe repository for the wallet or memorandum book, and we have noticed on certain rare holiday outings that some of our youth who affect short jackets or fancy shirts as becoming warm-day recreations, use the back pocket for their handkerchiefs, commonly permitting a liberal section of colored border to dangle loosely outside.

Lately another use for this modern improvement in masculine dress has been discovered, and as it comes to us with the support of good authority we hasten to set forth its character. A medical man tells us with a good show of argument that the hip-pocket is hygienically valuable to correct the general tendency to one-sidedness and stoop-shoulders among boys and young men, and he thinks that it would be a good plan for society to abandon the side pockets for the male members of the rising generation. With two pockets only and those at the hips in the back of the trousers, the boy who likes to have his hands in his pockets, and what boy doesn't? would be required to assume a pose tending to draw his shoulders backward and to project his chest, and thus a habit of exercise beneficial to lungs and heart would be cultivated, and in the outcome of it we should have fewer round-shouldered, consumptive, dyspeptic men.

We indorse the wisdom of this counsel, and would urge our readers to adopt it pretty generally, man and boy alike. And we would add a word for the feminine side of humanity, because the hygienic value of this idea affects women as much as it does men. We have indeed more one-sided, stoop-shouldered, weak-backed girls among us than boys, and that they may be straightened up, made harmonious, symmetrical and strong must be the common wish of society. Put hip-pockets in their dresses.

jerseys, sacques, and let them as well as the boys have a chance for lung growth, health and beauty. Here is a suggestion for our hygienic, new-costume, dress-reform lady friends that we suppose they will instantly and enthusiastically accept and practically apply.

SIGNOR MIRAGLIA, THE ITALIAN PHRENOLOGIST.

Italian science has developed several names of distinction in Phrenology, men who early accepted the doctrine of Gall and Spurzheim, at least, so far as the general principle of localization are concerned. Dr. Fossati was a man of commanding influence thirty years ago, and his death, although at an advanced age, was a reason of no little regret on the part of advanced minds. Now we have occasion to record the recent death of another brilliant observer and worker, a man who, joined to an earnest desire for original investigation, motives of a high philanthropical character, and who in his way might be said to have been an Italian Pinel, since he labored during a good part of his life for the improvement of methods in the treatment of the insane.

The *Journal of Mental Science* London, in a late number gives an interesting and appreciative sketch of Prof. Bragio G. Miraglia, who was born Aug. 21 1814 at Cosenza in Calabria, where his father was a magistrate. In spite of delicate health he early showed literary and artistic ability. Inclining toward medicine, he pursued the requisite course of study and afterward began to practice in a somewhat remote district of Calabria, but soon returned to Naples where his abilities made him known. He was appointed on the staff of the Royal Asylum of Aversa and became the Director of this institution, devoting himself to its improvement in every department.

While a young man he was drawn to an examination of the philosophy of Gall, and becoming convinced of its substantial basis in nature he openly advocated it, and was from that time on an earnest student of Phrenological science. He established the Society Phrenopatica Italiana, a literary and scientific society; published a large number of essays on different medical, physiological and medico-legal subjects. From 1860 to 1868 he edited the *Phreno-Patica Italiana*, which he established, and also issued detailed reports of the Asylum at Aversa. Perhaps that work of his which is of the highest importance is embodied in a treatise entitled *Trattato di Phrenologia applicata alla medicinia giurio prudenzea*, a treatise on Phrenology applied to medicine and jurisprudence, which was published in 1853. This, as the *Journal of Mental Science* says, contributed more, probably, than any other Italian work to spread and enlarge Gall's system. His life was a striking example of devotion to his profession and to science. He was as ardent a student at the age of seventy as at the beginning of his career. When such men leave us we can properly assert that the world has suffered loss. There are many occupying conspicuous places in the walks of scientific investigation, but very few that show the spirit of Miraglia, who in the late maturity of age was always eager to welcome new truth, and especially that which has relation to human nature on the side of its advancement.

MEDICAL MISSIONARIES.

In the February number an article was published describing a new phase in organized missionary endeavor—the association of trained medical skill with the teaching of moral and religious truths. The fact has been evident enough for many years that the best success in those fields of effete civilization and inveterate paganism, China, India and Africa, was reaped by the missionary who possessed some ability as a physician and could minister to the bodies diseased of the people among whom he lived. In India and China the medical missionary has usually found himself overwhelmed by applicants for the treatment of all sorts of affections, and those who experienced relief from pain and distress were not unwilling to hear the spiritual message that their benefactor had to deliver.

The earliest Gospel teaching of which we have any record was associated with that of the healer. The disciples were invested with power to cure the sick and even to raise the dead, and such extraordinary power drew multitudes to them wherever they went. The missionary who goes into a remote Asiatic district to-day finds people not unlike those of apostolic time—ignorant, oppressed, superstitious, a large proportion suffering from a variety of maladies that their own rude attempts to treat only aggravate. If he can only stand up and repeat the story of Christ and the promise of the Gospel, native prejudice and mistrust, prevent him for a long time from getting a footing in the place. But if he can take some of the sick ones into his house and from a practical knowledge of pathology and normal therapeutics give them treatment and improve their condition, he at once finds favor with a large class and the best opportunities are given for his religious teaching.

Here is a field for woman that is one of the most useful that can be entered upon. In some parts of the East women are by far the most efficient as missionaries. In Japan, China and Turkey women can go where men are entirely excluded, and if they carry with them a knowledge of medicine they are welcomed by the female population most cordially, and it is said that they can easily make their place self-sustaining. Probably five thousand women trained as physicians could to-day find abundant room for labor in the countries mentioned, and do an incalculable amount of good work, both physical and spiritual, in a short time.

We wonder that several institutions like that organized by Dr. Dowkontt in New York were not started long ago. But now that the principle of medical missions has taken this concrete form we shall expect to see it generally applied, as it should be, in the training of men and women for missionary service in foreign lands.

PROGRESS AGAINST PREJUDICE.—"God help the patients!" groaned the physicians of England, with one voice, when the London Temperance Hospital was founded. But that institution, by reason of the results which it has accomplished, now challenges the admiration of the medical profession. Since its establishment, 3,000 patients have been treated, and alcohol has been prescribed in only five cases. Yet the death rate has averaged but five per cent.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST," ONLY WILL *be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

TO OUR CONTRIBUTORS. It will greatly aid the *editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the compositor has to read it across the case, a distance of over two feet, and the editor often wishes to make changes or additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNAVAILABLE *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal and private matters addressed to the Editor will receive his early attention if this is done.*

MARTYRS AND VITATIVENESS.—F. B. W.—We doubt not that the victims of the Inquisition had an average development of Vitativeness, as a rule. The fact that a person will sacrifice life for religious belief is not evidence against a good degree of the organ since no feeling or instinct will carry one to a greater extreme of endurance and suffering than the religious sentiment. The amount of torture one will submit to before dying may be taken as an evidence of the strength of this organ; and if some of the accounts are true of martyrs having been gradually mutilated, even to the loss of arms and legs before falling into the unconsciousness of death, they must have possessed an amazing degree of vitality and Vitativeness.

OUR MEDICAL "SCHOOL."—M. J. K. asks: To what particular school of medicine do the members of your Company belong?

Answer.—We belong to that advanced school that believes in the virtues of right living; that obedience to the laws of physiology and hygiene will prove the most effective means of securing and preserving health. A carefully ordered diet, cleanliness, comfortable clothing, out-of-door exercise are the leading agents in our *materia medica*. We attach chief importance to prophylactic or preventive measures, and relate curative processes to them. The Editor, it may be said, has given special attention to nerve diseases because of the great and increasing demand for advice in that complex branch of modern pathology, but here we are satisfied, as in regard to other branches, that nearly all acute and chronic, local and general nerve affections are due to false methods of living, or to improper and vicious practices.

A FORLORN DISTRICT.—W. P.—We are sorry that you find yourself in so unsympathetic a region of Missouri, and hope that in your professional relations that you will do your best to enlighten public sentiment with regard to the principles and practice of scientific Phrenology. A physician has opportunities that do not occur to most other men for illustrating the facts of mental science, and they can often redeem its credit when injured by impostors.

THE NEW JERSEY JOKE.—*Question:* A great many people, especially among those who live in New York City are inclined to allude often to New Jersey as a "foreign country," and very few, we dare say, could give the origin for the rather stale joke thus perpetrated. At least I don't find any who

can give me a definite answer when I ask for information. Can you tell me?—B.

Answer: It is said to have originated in this wise: After the downfall of the first Napoleon, his brother Joseph, who had been king of Spain, and his nephew, Prince Murat sought refuge in the United States, bringing with them great wealth. Joseph tried to induce several states to pass an act to enable him as an alien to hold real estate, but they all refused. Finally, the New Jersey legislature granted to him and Prince Murat the privilege of purchasing land. They bought a tract of land at Bordentown, built magnificent dwellings and fitted them up in royal style with pictures, sculptures, etc. Joseph Bonaparte's residence was the finest in America. He was liberal with his money, and made many friends. The Philadelphians were envious of the good fortune of the Jerseymen in securing the two millionaires and taunted them with being "foreigners," and with importing the king of Spain to rule over them.

Personal Advice.—H. G.—The editor has already written to you, stating the conditions on which he will give you advice. As you will find at the head of this department, questions of a general interest only are to be answered here. Personal matters can not be considered properly, and such matters especially as are of medical nature. When the question is opportune and hygienic advice of a general application can be given, it is always given in its order.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects being preferred.

Presentiment What Good?

I should like to ask C. H. Bliss if he can keep out of danger by being warned. He says he has been warned of danger by impressions. My experience thus far has led me to believe "What is to be will be." I have had dreams that came to pass, have had impressions, but did not know what course to pursue to avoid the threatened danger. A few years ago I had a presentiment of trouble. I plainly saw my enemy with a black spot on the side of his nose, but I could not afterward recollect his countenance. I saw or seemed to see two different buildings and knew in what city each was situated. I rememember now just how each looked. I have seen the enemy; he placed his finger which was stained with ink at the side of his nose and left a spot somehow. I did not think at the time about my presentiment, but afterward when I did I though I would keep him from being an enemy if possible. I could see no cause for his being unfriendly, I treated him respectfully no matter what he said or how he acted toward me. I did not return evil for evil, but as it turned out he seemed determined to be the enemy and so has proved. I could tell more about this if I thought it interesting. The vision or whatever you may call it lasted nearly an hour. Every thing has occurred just as I was impressed.

When a little girl, my parents, myself and the rest of the children went about eight miles from home to gather berries; as we alighted from the wagon my mother stood still and gazed before her with countenance pale. I stepped to her and asked "What's the matter, mother?" Still she gazed, sighed, said nothing, and finally went to work with us in the field. In a few days she received a letter from Massachusetts, her former home. Before opening it she sat for a moment in the attitude of prayer. Afterward she said that she already knew what that letter contained, it was the news of the death of her mother; and so it proved. She saw the funeral procession when she alighted from the wagon on the berry trip. Then she did not even know that her mother was sick.

M. G.

Force of Character.

It is a mistaken idea that force of character necessarily results "In abrupt, uncourteous manners." Force of character consists in the development of will power in the various mental capacities. It is the guiding power that makes all things possible. There are none of us, no matter how secluded our lives may be, who do not feel the need of such a factor in our lives.

"Assumed independence" is *not* force of character. That is a spurious article, not genuine. The little every-day traits that are not conspicious, the natural expression of our ideas in unguarded moments are what express the strength of our character. Does Mrs. Horr think that all people who

have force of character are never amiable, unobstrusive, or undemonstrative? Such has assuredly *not* been my experience. One of the most loveable characters I ever met was one in which force was the leading power. There is force in the air, force that would crush us, if it were not equably distributed over the earth, It is not necessary that "morally all should be severe, stern," to be forcible. It is not always true that "the bravest are the gentlest," for some brave men have been cruel, but it is true that those who are both brave and tender are the ones who have the most influence.

Neither do I wish our shrubs to be changed to oaks, our violets and snow-drops to dahlias and sun-flowers. But does it not require as much vital force on the part of the violet or snow-drop, as on the part of the dahlia or sun-flower, to grow and bloom under the circumstances of life? The influence of the lovely, modest little violet is typical of the true character of many great men. Is there a flower better known or whose history is greater than that of the violets? Who can separate the memory of Napoleon Bonaparte from that of the violet? The force of its influence on his heart is known wherever his name is.

Did it not require as much force of character to make a Ruth as a Judith, a Cornelia as a Dido? Surely Peter Cooper, and Longfellow, had as much of the article as Washington, or Wellington.

"It was this force that was typified in past ages by the giants . . . who, however they might triumph over the innocent and unprotected for a time, were eventually slain or taken captive by the brave and gentle knights, working in the name and through the power of love." It should read "through the force of love." That does not diminish the necessity of force, it only shows that the force of love is stronger than the force of mere physical strength. Still, physical and moral strength combined have a greater and nobler force than either can have separately.

We do not wish to separate force from tenderness or gentleness. What would tenderness amount to if it did not have force enough to manifest itself? What would any of the elements of our minds amount to if the unseen forces of our nature did not force them into development? Florence Nightingale surely did not lack courage, self-denial, faithfulness, generosity, or any of the other qualities requisite in forming a beautiful and harmonious character, but her character is beautiful by the very force of these qualities. There is a difference between "force" and "grit, spunk, etc.," to my mind "grit" is used to signify tenacity of purpose. Force is the element which penetrates all life, like the fragrance of the rose, subtle, penetrating, pervading all qualities and characteristics, unnoticed, often unknown, and unhonored, but without which those qualities would be profitless. Force is something from which we can not escape, and the best thing to be done is to direct it in the proper channels. E. M. P.

JOURNALISTIC MISREPRESENTATION.—L. S. —A great deal of bosh is published in the columns of respectable newspapers with regard to the brain and men of brain. It seems to us that there are some people who are very anxious to make a reputation by writing and publishing statements on the physiology of the mind that are right contrary to well ascertained facts. What you quote from New York *Tid-Bits* is of a piece with this. The article begins with a practical insult to Anthropology, and such men as Broca, Tiedemann, Delaunay, Dalton, Ferrier and other modern physiologists. There are no authentic measurements to show that Alexander the Great or Julius Cæsar or Herodituss, or Plato, or Aristotle, or Epicurus, or Lord Bacon, or Frederick the Great had small heads. Because the portrait on an old worn coin shows a head with a receding forehead, and is allied to a distinguished historical name, does not prove that the person so named had a small head and no man with any scientific knowledge would claim that it did. Lord Byron did not have a "positively small" head; it is stated in the books that Byron's brain weighed between fifty and sixty ounces, five or six ounces above the average. Plato was so named because of the breadth of his head; his original name was Neanthes, we think. How about modern great men? Bismarck, Gladstone, Evarts, Parnell, Dr. Storrs, and others of pre-eminent distinction, are their heads not large? Then, too, the statement with regard to the old Greek sculptures is unfortunate. We never saw a classical representation of Jupiter, or Apollo, or Minerva that was not large in the forehead. The heads, however, of mythology that simply represented physical and passional elements such as Venus, Bacchus, etc., are distinguished by large back heads and rather small, and low foreheads. Our only appeal is to truth; and we heartily wish that those newspaper men who attempt to write about the brain and heads would study physiology a little, and make some systematic observations before touching ink.

PERSONAL.

REMBRANDT'S life was one of those careers that are not so very unusual in the allotments of Fortune to genius. It is for the most part a sad story of bankruptcy, neglect and poverty. After Rembrandt's failure, his son Titus, entered into partnership with Hendrickie Stoeffle, who had been a model, for the business of selling prints, and the young man travelled about Holland offering for sale his father's etchings. But they were not successful; misfortunes accumulated and the master survived both, leaving nothing when he died but his clothes and the furniture of his studio.

When MARIE MITCHELL, the well-known professor in Vassar College, turned her 67th year not long ago, the undergraduates made her a present in honor of the occasion, a jelly cake composed of sixty-seven layers. The account of the pleasant affair stops at this point, but every one may be sure that the students looked out that each had a good chunk of the cake.

PROFESSOR WELCKERS of Halle announces that the body resting in the Weimar mausoleum is not really that of Schiller. This he professes to have proved by comparing the skull with the cast of the poet's face taken immediately after his death. Having seen a cast of the so-called skull of the poet, we add our belief to Prof. Welcker's that there is some mistake, as the cast in no way corresponds to the received bust.

WILLIAM BENJAMIN CARPENTER, one of England's most eminent physiologists, and well known in America by his numerous works, died in London, November 10th last, from the effects of terrible burns caused by the upsetting of a lamp while he was taking a vapor bath. At one time a defender of alcohol he later became a friend of the temperance interest.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

Whatever tends to realize and to strengthen true self-respect, promotes human welfare. This talent and that may seem great to us, but good sense with sterling honesty makes character noblest.—*Drayton.*

He who has a thousand friends has not a friend to spare,
And he who has one enemy will meet him everywhere.—*Emerson.*

You may labor against vain glory till you conceive that you are humble, and the fond conceit of your humility will prove to be pride in full bloom.—*Spurgeon.*

—Whatever the number of a man's friends, there will be times in his life when he has one too few.—*Democritus.*

—There is no defense against reproach but obscurity; it is a kind of concomitant to greatness, as satires and invectives were an essential part of a Roman triumph.—*Addison.*

MIRTH.

"A little nonsense now and then,
Is relished by the wisest men."

—"Hello, Judson, how are you?" "Pretty well, thank you." "How are you at home?" "Wife says I'm rather grumpy."

Grocer: "Half a pound of tea? Which will you have, black or green?" Servant: "Shure, ayther will do. It's for an ould woman that's blind!"

Pompous physician to patient's wife: "Why did you delay sending for me until he was out of his mind?" *Wife:* "Oh doctor, while he was in his right mind he wouldn't let me send for you."

The ladies were talking about their old silver and the newer designs, when Mrs. Oldblossom said: "I use nothing upon my table but hammered ware." And just then, as a crash of resounding china came from the kitchen, she added, "And there's the artist hammering some of it."

"Ephrum, what makes so many cat-tails grow in dis heah pon'?" "Wull, I would say! Doan you know? Why, dey grows up from kittens dat people hez drowned in de pon', of course. Pea's like you wimmen folk, doan know nuffin 'bout agriculshah."

—"Uncle James," said a Boston young lady who was spending a few days in the country, "is that chicken by the gate a Brahmin?" "No," replied Uncle James, "he's a Leghorn." "Why, to be sure," said the young lady. "How stupid of me! I can see the horns on his ankles."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor the Editor with recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

PLURAL MARRIAGE.—The heart history of Adele Hersch, By Veronique Petit. 12 mo., pp. 99. published for the author by Norton, Ithaca, N. Y.

A very tastefully executed little volume as to printing and binding, quite a novelty in fact. The story is told journal-wise which adds to the effect of naturalness. Besides, it bears the marks of careful authorship, and the impress of a tender-hearted woman on every page. A solution of the enigma of the apparent peace in Mormon households is given by Adele Hersch in her records of the intimacy between herself and the "sealed" wife, who had a half-interest in Adele's beloved husband. The spirit of the work is adverse to polygamy, which may be easily inferred, yet with all its earnestness the faults of that system are so temperately told that we can not reasonably impute mere prejudice or a bigoted hostility to the author. There is feeling, as well as true logical method in Miss Petit's treatment of the very grave, social and political question, and as we read, we can not help believing that she understands it, and writes for her country as well as for the honor and dignity of her sex.

WEBB'S NEW WORD METHOD. — An independent First Book for teaching children to read; 12 mo., pp. 150; price 24 cents; Potter, Ainsworth & Co., New York.

The text of this book is illustrated with good taste, the typography is excellent, and the binding has been done with the memory of school-day carelessness almost haunting the workmen. It will prove a reasonable, durable book. Of this method many commendatory letters have been written by such eminent educators as Dr, N. A. Calkins, Prof. Bellows and Dr. Wells.

If reading can be made *easy* for little children, Mr. Webb has certainly accomplished that end, for he has illustrated with a rare knowledge of childhood's fancies every attractive principle appropriate to the purpose.

SYLVIAN: a Tragedy, and Poems. By John Philip Varley, 12 mo., pp. 203. Price, $1.25.; Brentano Brothers, New York.

Mr. Varley, we may say, has succeeded in his tragedy in depicting fairly the "passion torn" side of young life, that period when the humors of love appear to be stronger in most people than good, intellectual judgment. The general style of the work, action, language, etc., are mediæval, and while these may please the romantic, they who read between the lines will, we trow, better understand the motive of the author. Much variety of motive and measure is shown in the "Poems." We are inclined to think that a spirit of cynicism or sarcasm lurks in the lines of a large proportion. Although in the lyrical pieces there is indicated a warmth now and then that will please even an admirer of Rosetti. No fault can be imputed to the publishers; they have produced the volume in a style that is delightful to the lover of good bookmaking.

PUBLICATIONS RECEIVED.

THE AMERICAN JOURNAL OF INSANITY for January contains a valuable list of topics in its special line. A paper by Dr. H. A. Buttolph of New Jersey is given first place. It is a review practically of the Gallian or Phrenological doctrine of the Physiology of the Brain, and a powerful discussion in favor of organic localization. "A Visit to Gheel," and "Senile Melancholy" are other well-prepared contributions. Dr. John Gray, Editor, Utica, N. Y.

THE BRITISH QUARTERLY REVIEW for January contains important essays on "Mr. Arnold and his Discourses in America," "The Greville Memoirs," "The Established Church and its Defenders," "Personal Memoirs of Ulysses S. Grant, etc." Leonard Scott's Pub. Co., Philadelphia.

THE CENTURY MAGAZINE for February is particularly attractive in artistic efforts. "The Dance in Place Congo" illustrates old New Orleans life in a novel fashion to most readers. "Recent Architecture in Amer-

ica," brings New York prominently for richness of private mansions. There are a half dozen articles on the late war more or less illustrated. The Open Letters, Bric-a-brac, and other departments are well sustained with current notes.

HARPER'S MAGAZINE for February keeps well up to its later standard, in art and literary respects. Papers are given on the "British Navy," "The Blue Grass Region of Kentucky," "Manual Training," "Education as a Factor in Prison Reform," besides the attractive instalments of fiction and the contributions of an exceptionally strong corps of editors. Harper Brothers, New York.

THE CALENDARS for 1886 are almost "too numerous to mention;" among the business firms who have thus catered to the popular taste, we would name Corlies, Macy & Co., Account Book manufacterers, 39 Nassau street, New York, Germania Fire Insurance Co., New York, Standard Electric Clock Co., Houghton, Miflin & Co., Boston and New York, "Youth's Companion," Perry, Mason & Co., Boston, Mass. W. H. Butler, Lithographic Printer and Publisher, Philadelphia. With such beautiful decorations of the desk, the donors have secured for themselves remembrance during the year at least.

THE POPULAR SCIENCE MONTHLY for February offers several papers of merit on topics of current interest. Among them an illustrated account of "The Improvement of East River and Hell Gate," by General John Newton; "The Interpreters of Genesis and the Interpreters of Nature," by Professor Huxley; "Influence of Inventions upon Civilization," "The Musket as a Social Force," and two biographical sketches, Dr. William B. Carpenter, the English physiologist, and James B. Eads, are particularly notable. D. Appleton & Company, New York.

PROCEEDINGS OF THE SOCIETY OF PSYCHICAL RESEARCH PART 9, DEC. 1885.—Just received through the courtesy of the secretary, is a bulky document. The report on Phenomena connected with Theosophy, occupies more than one-half of the space, nearly two hundred pages with numerous plates or appendices. Other points of interest are Somewhat higher aspects of Mesmerism, Further reports on experiments in Thought transference, Local *anesthesia* as induced by Mesmeric passes. If one is to judge from the size of the latter reports of the Society, subjects which now engage their attention possess a peculiar interest. However, it must be understood that the gentlemen and ladies concerned in these investigations are in earnest, and intend to discharge their duty conscientiously. Price of the part, 4 shillings 6 pence, English.

AN IDYL OF NANTUCKET.—The Rev. Robert Collyer, of New York, has rendered the æsthetic public a pleasant service by publishing in tasteful form, an old-time letter written by a modest maiden in Nantucket in the year 1745. For an evening's reading scarcely anything more delightful has appeared this winter. It is a sweet bit of Puritan home life that makes our modern social fictions appear hollow enough.

THE DIETETIC REFORMER.—Organ of the Vegetarian Society of England, adds to its quality of usefulness a price that brings it within the reach of the poorest, being but two pence, or four cents a number. It always contains a variety of information from the best sources relating to normal dieteties. Its department, that relates to cheap foods, recipes, and so on, is of great value to those in moderate circumstances.

CURRENT EXCHANGES RECEIVED.

Parry's Literary Journal, Parry &. Co, Salt Lake City, Utah; World Travel Gazette, Monthly; World Travel Co.. New York; Youth's Companion, Perry Mason & Co. N. Y; The American, R. E. Thompson, Philadelphia; The Central Law Journal, W. H. Stephenson, St. Louis, Mo; Building, W. T. Comstock, Pub. N. Y; The Standard, J. A. Smith, Chicago, Ill; American Art Journal, W. M. Thoms, N. Y: The Journalist, W. G. McLaughlin. N. Y; The Cultivator and Country Gentlemen, Luther Tucker & Son, Albany, N, Y; Yale Courant, Yale College, New Haven, Ct; Banker's Magazine, Albert S Bowes, N. Y; Scientific American, Munn & Co N. Y; Journal of Education, Boston and Chicago; The Cincinnati Medical News, J. A. Thacker, A. M. M. D. Cincinnati, O; The Western Rural, Milton George, Chicago; Sanitary News. G. P Brown, Chicago; Voice of Masonry, John W. Browne, Chicago; Leisure Hours New York; Catholic Review, New York; The Journal of Materia Medica, New York; National Temperance Advocate, J. N. Stearns, New York; Germantown Telegraph, Germantown, Pa; The Folio, White Smith & Co, Boston and Chicago: The Nation, New York; Saturday Evening Post, Philadelphia.